Winchell Library of Geology

The OIL WEEKLY

OIL and GAS ENGINEERING

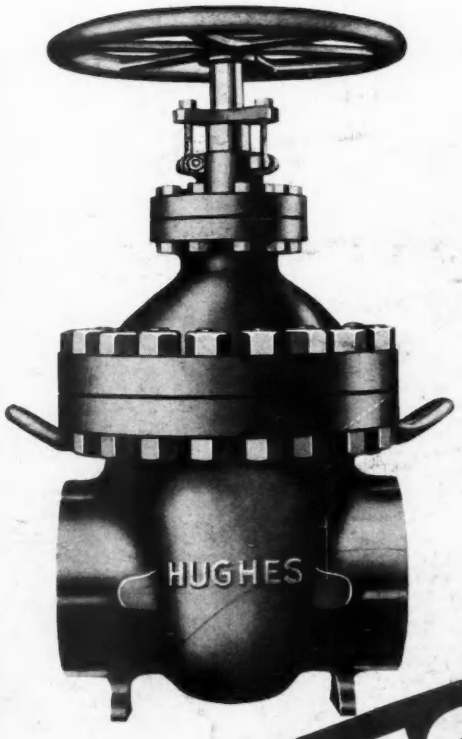
FOR OIL AND GAS PRODUCTION AND PIPE LINE DIVISIONS

THE WEEK'S NEWS INTERPRETED

UNIVERSITY OF MINNESOTA RECEIVED DEC 18 32 LIBRARY

ECEMBER 12, 1932
ne 67 Number 13

Wise Men Safeguard Their Investment by Using HUGHES VALVES



Valves and fittings are used for two purposes — Safety and Control of the well.

The degree to which the product meets these requirements establishes its economic place in the Industry — NOT ORIGINAL COST.

Hughes Valves and Fittings are most economical because they "do the job most efficiently."

HUGHES VALVES

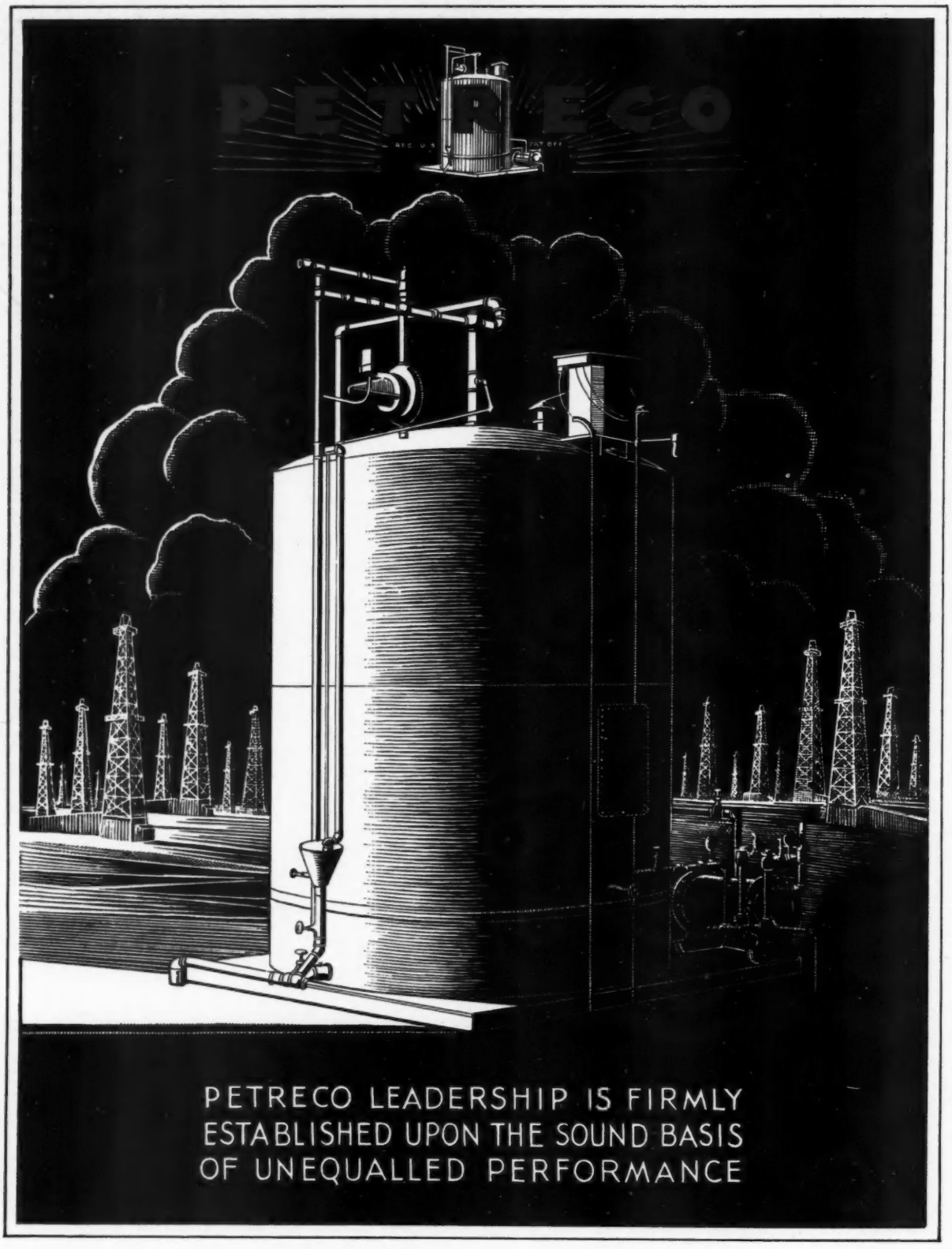
Hughes Valves and Fittings are stocked by Supply Stores Everywhere

HUGHES TOOL COMPANY

Service Plants: Los Angeles, Calif. Oklahoma City, Okla. Midland, Texas

Main Office and Plant: HOUSTON, TEXAS

Export Offices: 19 Rector St., New York City



THE ELECTRICAL PROCESS FOR DEHYDRATING CRUDE OIL EMULSIONS

(Fully Covered by Process and Apparatus Patents)

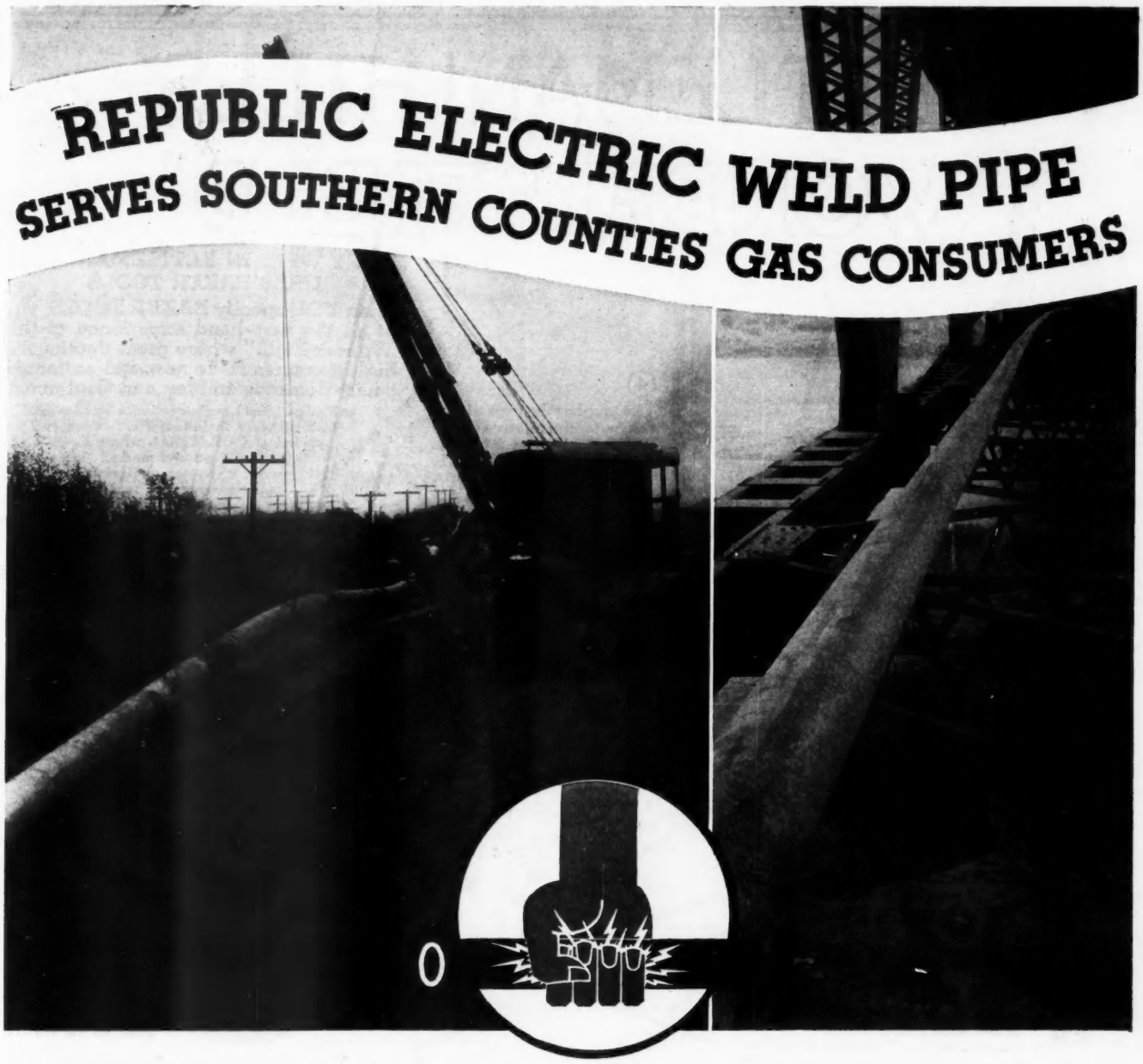
PETROLEUM RECTIFYING CO. OF CALIFORNIA

530 W. Sixth St., Los Angeles, California

Branch: 412 Petroleum Bldg., Houston, Texas

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

REPUBLIC ELECTRIC WELD PIPE
SERVES SOUTHERN COUNTIES GAS CONSUMERS



A RECENTLY completed gas line constructed by Southern Counties Gas Company, from Huntington Beach to San Diego, Calif. used 88 miles of Republic Electric Weld Pipe—68 miles of 12-inch and 20 miles of 8-inch, and represents one of the largest pipe orders from the Pacific Coast in 1932.

The line passes through the hilly section of Southern California and through thickly populated territory where cost of replacement would be prohibitive. Consequently only the most dependable materials could be considered. Black pipe was used underground, and, where the line crosses the San Luis Del Rey River, extra heavy pipe, heavily galvanized, was used.

These, briefly, are the qualities of Republic Electric Weld Pipe that have led to its selection by so many of the large buyers of line pipe—its strength of weld—its straightness—its uniform wall thickness—its roundness—its freedom from scale inside and outside—and long lengths.

If you haven't seen Catalog 210-B, telling all about this better pipe, write for your copy today.

REPUBLIC STEEL CORPORATION
GENERAL OFFICES YOUNGSTOWN, OHIO

REPUBLIC
ELECTRIC WELD
LINE PIPE • CASING • TUBING

KETTLEMAN HILLS "WONDER FIELD"

EVERY WELL IN KETTLEMAN HILLS USES BAKER TOOLS

When YOU specify BAKER TOOLS, you get all the first-hand experience of that "Wonder Field" where great depths and high pressures made new and extraordinary demands on Men and Equipment.

- You get "first hand" experience because BAKER TOOLS were Invented, Field-tested and Improved at COALINGA where R. C. "Carl" Baker has lived and worked for some 33 years...where the original Baker Factory still serves as his Field Research Shop for all Baker Equipment.
- When you buy BAKER TOOLS you benefit by "Carl" Baker's intimate knowledge of every field problem run into by every operator in Kettleman Hills...you benefit by the experience of the Operators who put Kettleman Hills on the Oil Country map.

(1) Kettleman's Hard Brown Shale was not too tough for the Baker Hydraulic Expansion WALL SCRAPER... used to ream a 12¼" hole out to 19" in a successful attempt to straighten well bore.

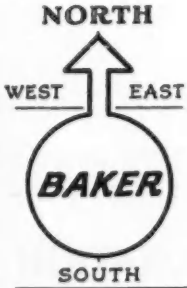
(4) The tougher the formations, the better the relative showing made by the BAKER ROTARY CORE BARREL. It was chosen time and again when the going got too tough for other types of core barrels and bits.

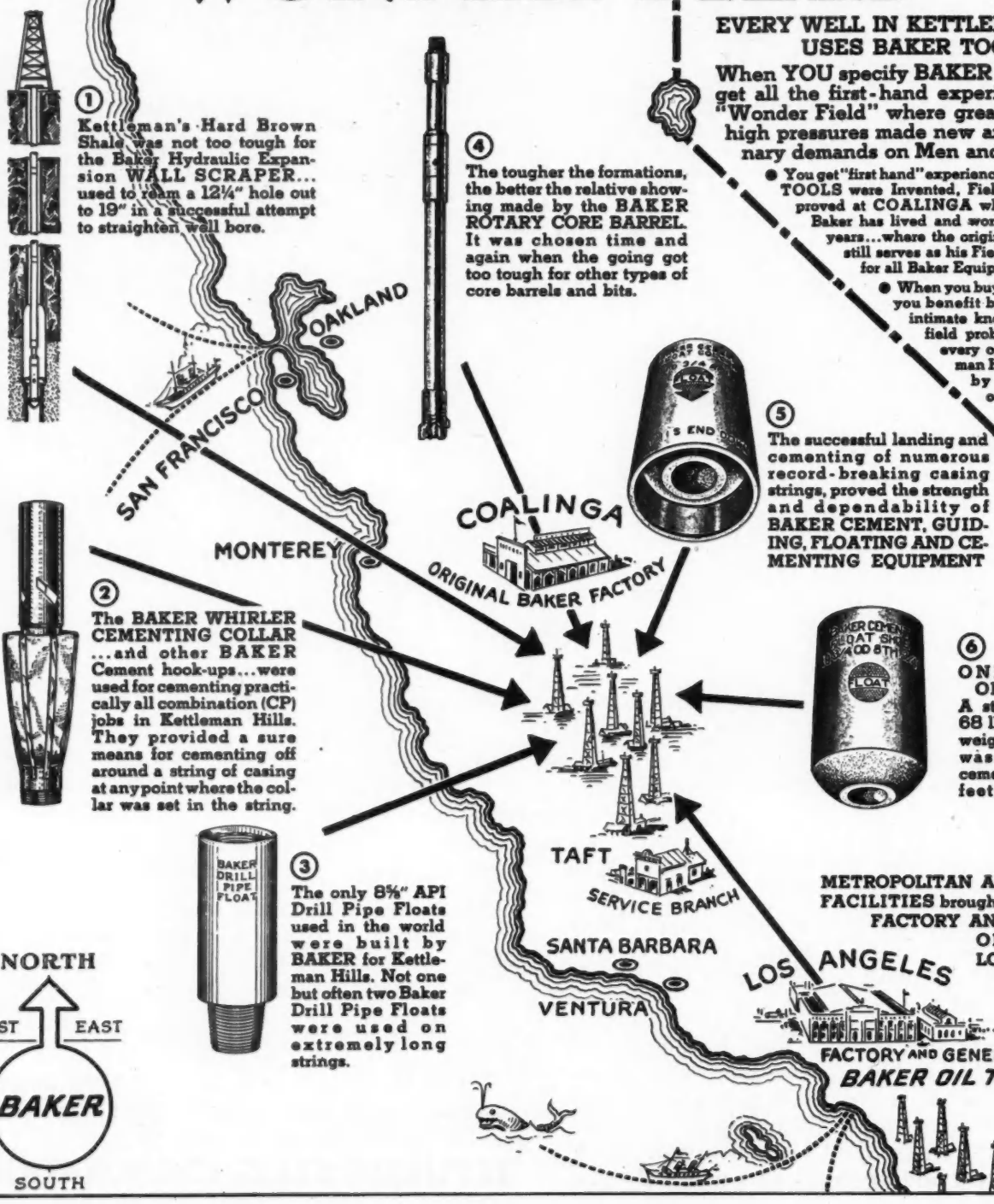
(5) The successful landing and cementing of numerous record-breaking casing strings, proved the strength and dependability of BAKER CEMENT, GUIDING, FLOATING AND CEMENTING EQUIPMENT

(2) The BAKER WHIRLER CEMENTING COLLAR ...and other BAKER Cement hook-ups...were used for cementing practically all combination (CP) jobs in Kettleman Hills. They provided a sure means for cementing off around a string of casing at any point where the collar was set in the string.

(3) The only 8⅝" API Drill Pipe Floats used in the world were built by BAKER for Kettleman Hills. Not one but often two Baker Drill Pipe Floats were used on extremely long strings.

(6) ONE RECORD OF MANY:— A string of 13⅜", 68 lb. API Casing, weighing 230 tons was landed and cemented at 6766 feet in 19 hours.





METROPOLITAN AND EXPORT FACILITIES brought the **BAKER FACTORY AND GENERAL OFFICES TO LOS ANGELES** in 1922

FACTORY AND GENERAL OFFICES
BAKER OIL TOOLS, INC.

BAKER OIL TOOLS, INC.

Main Office and Factory..HUNTINGTON PARK, CALIFORNIA..P.O. Box 609A

COALINGA • TAFT • HOUSTON • TULSA • OKLAHOMA CITY • NEW YORK

THE OIL WEEKLY

December 12, 1932
Vol. 67, No. 13

COPYRIGHT, 1932

Published Weekly by
THE GULF PUBLISHING COMPANY
HOUSTON, TEXAS

S. W. ROBINSON
Editor

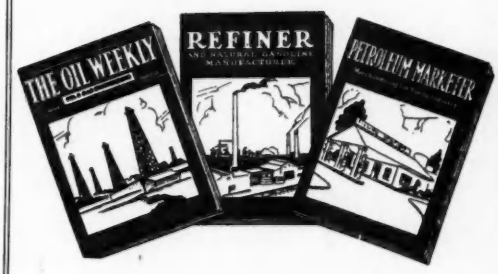
CONTENTS

Special Features

Texas Allowables Get Big Slash When Nominations Are Corrected 9
Rabb Ridge Important Potentially, Made Interesting by High Valuation 10
Texas Legislature Considers Demand Provision on Trial 13
Congress Will Be Requested to Strengthen Conservation Laws . . 13
Unite Operation of Government Oil Land Accomplished Under Hoover 14
President Hoover Asks Congress to Abolish Federal Oil Board . . 14
East Texas Proration Almanac 16
Derrick Foundation on Isolated Ocean Pier in 38 Feet of Water 21
Pressure Maintenance in East Texas 26
John A. Ritter
Air Operated Steam Engines Solved This Pumping Problem . . . 33
Simple Gas Heater Keeps Water Tank Pipe Line From Freezing 34

Regular Departments

Advertisers' Index 82
The Changing Panorama 7
Men in the Industry's News 15
Markets-Production-Crude Prices 35
United States Production Estimates 35
Crude Oil Price Quotations 38
California Fields 44
Oklahoma Fields 47
Kansas Fields 50
East Central Texas 52
North and West Texas 56
South Texas 63
Gulf Coast Fields 67
Louisiana Fields 70
Arkansas Fields 72
New Mexico and Rocky Mountains 74
Southeastern States 73
Eastern States 78
Michigan Fields 76
Squeaks from the Bull Wheel 82
New Equipment for the Field 79
News from the Industry's Equipment Makers 81



SPECIALIZED OIL JOURNALS

Published by

THE GULF PUBLISHING COMPANY

R. L. DUDLEY, *President*
A. L. BURNS, *Gen'l Manager*
S. W. ROBINSON, *Editorial Director*
J. KENT RIDLEY, *Managing Editor*

NEW YORK: Room 323, 250 Park Avenue, Dick Swinsky, Manager.

PITTSBURGH: 1407 Park Building, W. W. Pigue, Manager.

CHICAGO: Room 1235, 141 W. Jackson Blvd. Tom W. Nelson, Manager.

LOS ANGELES: 416 Haas Building, W. E. Green, Manager.

TULSA: 1020-23 Hunt Building, J. F. Carter, Jr., Manager.

FORT WORTH: 203 W. T. Waggoner Building, H. H. King, Manager.

Issued Monday of each week. Single copies 15 cents. Subscription price: Domestic $1.00 a year, Foreign $1.00 a year. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879. Subscription restricted to those engaged in the producing and pipe line branches of the oil business or the manufacture and distribution of oil field supplies. Advertising rates on application.

LET'S FACE THE FACTS

● Lay-Set Preformed Wire Rope has been sold *on merit* of performance . . . necessarily so, because it is in a different price field than ordinary non-preformed rope.

Merit of performance is proved . . . certainly no oil company or drilling contractor would continue to pay more for Lay-Set unless the service rendered was commensurate with its cost.

So here was the incentive to keep accurate records of Lay-Set performance . . . and as a result of these records of performance, Lay-Set Preformed Wire Rope sales have steadily grown in volume.

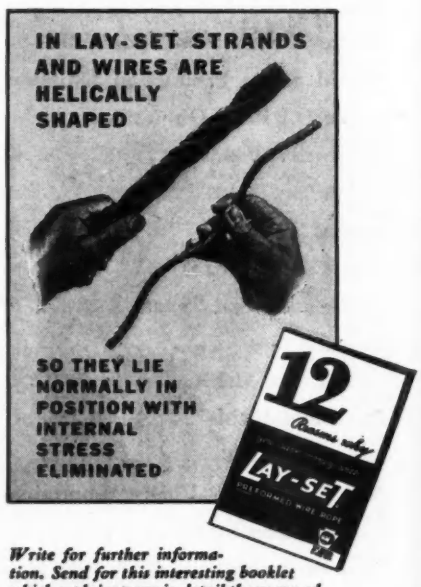
INTERNAL STRESS IN WIRE ROPE IS COSTLY . . . AND INEXCUSABLE

● How can 114 separate wires work in unison and resist fatigue in *non*-preformed wire rope—when each wire is under coil spring tension?

How can the strands of *non*-preformed wire rope carry balanced loads when the structure is unbalanced by this internal stress? Internal stress in *non*-preformed wire rope is a basic fault that is inexcusable.

Preforming strands and wires to their exact helical shapes eliminates internal stress. In LAY-SET Preformed Wire Rope, strands and wires lie naturally and fit perfectly in position. In work, every wire and strand carries its share of the load and does its share of the work—in teamwork with every other wire and strand.

That is why LAY-SET gives much greater service, longer wear and better efficiency. LAY-SET is more flexible, easier to handle, resists kinking and whipping at high speeds. It spools up faster and tighter under the comparatively light weight of the idle block. Specify LAY-SET for Rotary Lines, Sucker Rod, Swabbing and Sand Lines.


IN LAY-SET STRANDS AND WIRES ARE HELICALLY SHAPED
SO THEY LIE NORMALLY IN POSITION WITH INTERNAL STRESS ELIMINATED
12 Reasons why
LAY-SET

Write for further information. Send for this interesting booklet which explains more in detail the many advantages of Lay-Set Preformed Wire Rope.

HAZARD WIRE ROPE COMPANY

WILKES-BARRE, PENNSYLVANIA

New York Pittsburgh Chicago Denver Fort Worth Los Angeles
San Francisco Birmingham Philadelphia Tacoma

VOLUME 67, No. 13 DECEMBER 12, 1932

THE OIL WEEKLY

FOR OIL AND GAS PRODUCTION AND
PIPE LINE DIVISIONS

ENGINEERING • NEWS • STATISTICS

The Changing Panorama

Reports to the American Petroleum Institute from refining companies controlling 91.6 per cent of the 3,856,300-barrel estimated daily potential refining capacity of the United States, indicate that 2,006,000 barrels of crude oil daily were run to the stills operated by those companies during the week ending December 3, and that they had in storage at refineries at the end of the week, 32,331,000 barrels of gasoline and 131,986,000 barrels of gas and fuel oil. Gasoline at bulk terminals amounted to 11,624,000 barrels and 1,165,000 barrels were in water borne transit in or between districts.

Cracked gasoline production by companies owning 95.4 per cent of the potential charging capacity of all cracking units, averaged 419,000 barrels daily during the week.

Make It Unanimous

Proposal of President Hoover that the Federal Oil Conservation Board be abolished as such and its duties assumed by the Bureau of Mines is a small economy in the affairs of the general government, but well worth while if the move extends to the logical, the "powers and duties" of the board forgotten, and the money which has been accruing to it used to supplement the dwindling appropriations of the Bureau of Mines for more valuable activities. The Board was originated more or less under a misapprehension, at a time when it was believed by the public that the end of oil supplies was immediately in sight. Changes in consumption rate and the opening of new supplies has for the time removed the need for this concern on the part of the government; the need for conservation of this resource still exists but not in such measure that it can not better be recessed than can some other activities of the government with reference to the oil industry. From the standpoint of the oil industry, the work of the governmental agencies which are of assistance to the oil industry are all worth while, but taking the view of the average citizen, these activities are luxuries while the budget is out of balance.

LIVING IN A $50,000,000 OIL FIELD

Here is the field office at Rabb Ridge used by Gulf Production Company and Humble Oil & Refining Company, major operators which jointly control most of the productive and promising acreage in this new Texas Gulf Coast field.

Under these premises, the oil industry would fare better with the funds heretofore used for the abstract problems handled by the board being expended in continuing study of some of the concrete problems of the industry on the part of the Bureau of Mines.

High Cost of Domes

Is a Texas Gulf Coast salt dome worth fifty million dollars? Humble Oil & Refining Company bet a substantial part of that sum that Rabb Ridge in Fort Bend County will gross that much in oil when it acquired a half interest in the field for twenty million, paying three million dollars in cash. That trade was made several weeks ago, and since that time Humble Oil & Refining Company and Gulf Production Company have proceeded with development of the field in the substantial and orderly manner that characterizes unit operation of such properties. The price paid for the property indicates that the purchaser either had information upon which to base the belief that the field will prove above the Gulf Coast average in ultimate recovery, or anticipates greatly improved prices during its productive life—probably the latter. The financial end of the deal is of course the company's own business, but it is encouraging to smaller units in the industry to see this purchaser have that kind of a view of the future. Page 10.

The Oil Man's Calendar

1933

JANUARY

7-14 *National Automobile Show, New York, Grand Central Palace.*

9-10 *Northwest Petroleum Association, North Dakota Divison, Annual Convention Fargo, North Dakota, Waldorf Hotel.*

12-13 *Northwest Petroleum Association, Minnesota Division, Annual Convention, St. Paul, Minnesota, Lowry Hotel.*

28-Feb. 4 *National Automobile Show, Chicago, Coliseum.*

FEBRUARY

15-17 *Ohio Petroleum Marketers Association, Columbus, Ohio, Deshler-Wallick Hotel.*

27-Mar. 14 *14th Exposition of Chemical Industries, New York, Grand Central Palace.*

MARCH

23-25 *American Association of Petroleum Geologists, Rice Hotel, Houston, Texas. Concurrent Meetings: Society of Petroleum Geophysicists and Society of Economic Paleontologists and Mineralogists, Houston, Texas, Rice Hotel.*

APRIL

5-6 *Western Petroleum Refiners Association, Hot Springs, Arkansas.*

13-15 *Petroleum Industry Electrical Association, Tulsa, Oklahoma.*

17-23 *Oil Equipment and Engineering Exposition, Dallas, Texas.*

20-21 *National Petroleum Association, Cleveland, Ohio, Cleveland Hotel.*

JUNE

12-16 *American Oil Burner Association, Chicago, Stevens Hotel.*

OCTOBER

24-26 *Fourteenth Annual Meeting, American Petroleum Institute, Chicago.*

Study of pressure maintenance has, as much as the economics involved, centered interest on the East Texas oil field. Debate among operators there, in and out of the courts, as to the importance of maintaining an even withdrawal of the oil as a means of conserving the pressure by regulating it, and occasional lifting in spots of the regulated flow, has made possible an interesting study of the effects of regulated recovery on the pressure in what is possibly the world's largest single oil reservoir. Among the more valuable engineering discussions at the recent annual meeting of the American Petroleum Institute was a paper that includes charts of the field showing relative pressures of different portions of the pool at times during development. These pressure maps not only show effect on pressure of total withdrawal, but also show how pressure is affected by the rate of withdrawal. Page 26.

Ocean Drilling

Tending to prove that wildcatters will go wherever oil has a chance to be found, a drilling well off the California coast is also one of the engineering achievements of the year. Many a port would be proud of the depth of water at the dock built for the derrick foundation on this test which is drilling on the theory that the Rincon field extends further into the Pacific than is profitable to build a pier from the shore. In 38 feet of water, the pier for the test in question is 2700 feet from the beach and 1700 feet beyond the end of the pier which connects other ocean tests at that point with the land. Enough room has been provided on the pier for handling of the necessary materials, mud, etc. Page 21.

Air Solves Problem

Operators of an Oklahoma lease were confronted with this situation: The lease nearing nominal depletion, repressuring with gas and air was undertaken. Previously the wells had been pumped with individual gas engines, but the small quantity of gas accompanying the oil and need of the gas for recycling, reduced the quantity below that needed to operate compressors for repressuring and also run the pumping engines. In handling this problem, the gas engines were sold and replaced with used steam drilling engines whose cost about balanced the amount received for the discarded gas engines. The steam engines were mounted in place of the gas engines and connected with the air compressor station used in the repressuring project. Air at 200 pounds pressure operates the engines satisfactorily and its distribution over the field is not attended by the losses that would follow the same arrangement of steam pipes from a central plant. Page 33.

Texas Allowables *Get Big* Slash *When* Nominations *are* Corrected

Total allowable output of state placed at 797,745 barrels with 51,880 barrels reduction in effect.

Austin, Texas.—The revised allowables for Texas as announced by the Texas Railroad Commission, effective Saturday, December 10, reduced the total allowable of the state 51,880 barrels. The former allowable totaled 849,625 barrels, and the new order calls for 797,745. The largest cut was made in the East Texas field, and amounted to 15,000 barrels daily.

As first announced, there was a reduction of 13,000 barrels per day from the allowable for the Conroe field, but this was altered on Thursday, December 8, to 20,000 barrels. The resulting reduction was 5,000 barrels.

In justification of these reductions, Commissioner Lon A. Smith, issued the following statement:

"After mature consideration and study of the evidence on market demand for crude oil in the State of Texas and a careful check of offers to purchase, it was necessary to fix the allowable production for the East Texas field at 310,000 barrels, otherwise the many unconnected wells in that field could not be given connections and an opportunity to market their oil.

"The commission will adhere strictly to its order providing that connections be made in rotation in the order of well completions.

"Reductions in other areas were in like manner made to conform to what the commission found the actual market demand to be, after further study and determination of the market demand for oil, which was much less than it was estimated to be when the order of November 29 was issued."

Some observers were confused by the statement that reduction was made in order to increase the number of connected wells. This was explained, however, by the fact that many of the companies were taking more oil from the connections which they had than they were able to handle, and it was hoped that reducing the allowables for these wells, the unconnected wells, which number 285, could be allowed to run the excess oil.

According to commission figures, the lowest per-well allowable for East Texas will be 22 barrels per well. This is under the new bottom-hole pressure plan which went into effect Saturday, December 10. The 22-barrel allowance will apply to all wells on small tracts, and those on some of the larger tracts where bottom-hole pressures are lower than 1390 pounds, the average pressure throughout the field.

The new allowables, together with the reductions, are set out in the accompanying comparative table:

New Production Allowables in Texas

Field—	Allowable Oct. 15 Order	Allowable Nov. 29 Order	Allowable Dec. 7 Order	Reduction from Nov. 29
Panhandle	45,000	45,000	43,500	1,500
North Texas	46,000	56,000	50,000	6,000
West Central Texas	21,500	31,500	27,500	4,000
West Texas				
Yates	55,000	65,000	61,000	4,000
Winkler	25,000	27,000	25,000	2,000
Howard-Glasscock	12,500	14,000	14,000	....
Ector	4,000	4,000	4,000	....
Crane-Upton	12,700	13,000	12,000	1,000
Reagan County	20,000	20,000	20,000	....
Other fiields	12,500	14,900	14,900	....
Total West Texas	141,700	157,900	150,900	7,000
Southwest Texas				
Darst Creek	14,000	14,000	14,000	....
Salt Flat	7,500	7,500	6,500	1,000
Duval County	....	12,635	6,755	5,880
Other fields	27,450	14,815	14,815	....
Total Southwest Texas	48,950	48,950	42,070	6,880
East Central Texas				
Van	42,500	45,000	42,500	2,500
Other fields	6,700	6,700	6,700	....
Total East Central Texas	49,200	51,700	49,200	2,500
East Texas	335,000	325,000	310,000	15,000
Gulf Coast				
Rabb Ridge	6,000	10,000	10,000	....
Conroe	4,800	25,000	20,000	5,000
Raccoon Bend	4,250	5,500	4,500	1,000
Sugarland	8,000	9,000	8,000	1,000
Barber's Hill	19,108	19,100	18,100	1,000
Goose Creek	3,210	3,200	3,200	....
High Island	5,159	7,500	6,500	1,000
Hull	5,159	5,500	5,500	....
Humble	5,125	5,125	5,125	....
Pettus	3,822	3,800	3,800	....
Pierce Junction	4,688	4,700	4,700	....
Refugio	7,701	7,700	7,700	....
Spindletop	2,760	2,700	2,700	....
Other fields	24,750	24,750	24,750	....
Total Gulf Coast	104,335	133,575	124,575	9,000
Grand Total	791,705	849,625	797,745	51,880

BOTTOM-HOLE PRESSURE BASIS IN EFFECT

Austin, Texas.—Installation of of the new bottom-hole pressure method of proration in the East Texas field on Saturday, December 10, was announced by Wm. F. Knode, chief petroleum engineer for the Texas Railroad Commission.

Printed schedules showing the allowables for all wells are available at the commission's office at Henderson, in the East Texas field.

Rabb Ridge *Important Potentially* . *Made Interesting by* High Valuation

Purchase Indicates $50,000,000 Recovery

HAVING had a market value of almost $50,000,000 placed upon it last spring, when it had been developed and proven only to the extent of having eight producing wells, Rabb Ridge oil field, eastern Fort Bend County, Texas, is quite naturally looked upon as being among the most valuable, and therefore one of the most interesting, of the numerous salt dome pools on the Texas-Louisiana coastal plains.

The relatively great magnitude of the above evaluation becomes apparent when a few facts about Gulf Coast fields are considered. In the first place, many of the salt dome fields have sand conditions which are complex or erratic, giving rise to the drilling of relatively high percentages of dry holes and consequently to high development costs. Another important consideration is that the dome fields are typically small in area, usually producing from a circular area not exceeding two miles in diameter; and total oil recovery is therefore high for one of the fields only if its production is from thick and multiple sands. Only 11 of the Texas-Louisiana dome fields have as yet produced over 25,000,000 barrels of oil, five of those having yielded from 25,000,000 to 50,000,000 barrels, four between 70,000,000 and 75,000,000 barrels, and the remaining two 112,000,000 and 116,000,000 barrels, respectively. (See THE OIL WEEKLY, August 15, 1932, page 24.)

It is apparent in the light of all the above circumstances that Rabb Ridge is considered an extraordinary field. Since it was worth nearly $50,000,000 last spring in the opinion of a large and competent major company, it is evident that the company regarded it as a salt dome field of the highest order, with exceptionally large ultimate recovery in prospect.

When the field was evaluated, cognizance was obviously given to a large array of favorable factors. Not only were there known to be present five thick oil sands at depths of 3000 to 5400 feet, thus indicating high ultimate production, but those oil-bearing formations were interpreted as being in the form of sheet or blanket sands, spreading continuously over relatively large areas and doming gently and uniformly over a probable deep-seated salt plug, rather than being broken or in the form of lenses as are the sands on and around many of the shallower domes which have protruded up through the formations in which oil is found.

The blanket sands which are present at Rabb Ridge, together with the large volumes of gas found along with the oil and the concentration of ownership of both land and mineral leases in a few hands, will make particularly feasible the installation of a system for maintenance of gas pressure to prolong the flowing life of the field, a system which is being employed successfully in the nearby Sugarland field. While no pressure-maintenance system has been announced for Rabb Ridge, the practicability of installing such a system was obviously one of the factors contributing to the high evaluation of the field. The concentrated ownership of leases will also make possible other advanced, scientific practices in developing and producing the field, and maximum efficiency and economy may consequently be attained.

While the large quantity of oil likely to be produced at Rabb Ridge was obviously a primary consideration in placing the value of the field high, the quality of the oil was, no doubt, also considered important, being particularly desirable. The 24-26 gravity crude which is produced is suitable for making lubricating oils and it is a product from which gasoline of relatively high anti-knock rating can be made. Crude of this grade is becoming increasingly scarce along the coastal plains, since drilling to greater depths is resulting in production of greater proportions of oil of higher gravity.

Aside from the above factors, another important consideration which much have entered into the setting of the high evaluation upon the Fort Bend County field was the realization that it will be producing many years from now, and that the future will perhaps bring a scarcity of oil, accompanied naturally by increased oil prices.

The above mentioned figure as to the market value of Rabb Ridge field in its

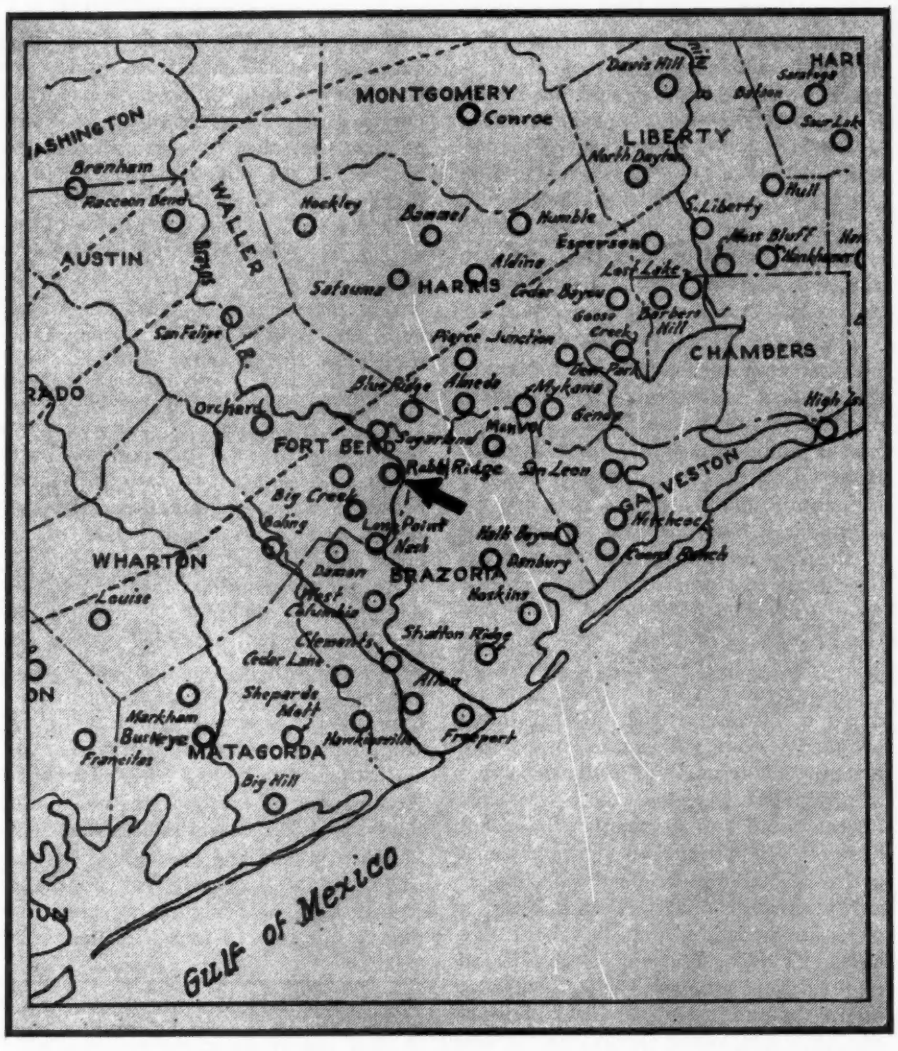
Since Rabb Ridge is expected to continue for years as a prolific field, living quarters of permanent type have been provided.

undeveloped state is based upon the fact that late in March, 1932, Humble Oil & Refining Company, one of the most widely experienced operators in the salt dome region, agreed to pay Cullen & West of Houston a total of $20,000,000 for a one-half interest in eight producing wells and a 7312-acre lease block embracing nearly all probable productive territory in the field. A cash payment of $3,000,000 was made, and $17,000,000 is to be paid in the form of one fourth of the first oil production accruing to the account of the Humble Oil & Refining Company.

The other one half interest in the large lease block is owned by Gulf Production Company, veteran salt dome operator. Had the Humble Oil & Refining Company interests purchased the Gulf Production Company one-half interest on the same basis as they acquired the Cullen & West holdings, the purchase price would of course have been $40,000,000. Furthermore, even the latter figure would not have represented the full market value of the field. For allowance has not been made for the fact that the large lease block represents ownership of only seven-eighths of the oil lying under it, the remaining one eight being retained as royalty by the land owners. Had that additional one-eighth also been acquired on a proportionate basis, to gain ownership of every barrel of oil afforded by the field, the total price would have reached almost $46,000,000. Furthermore, that total represents evaluation of the field in only a practically undeveloped condition. If allowance is made for the drilling of a large number of wells and other work which will be necessary to enable the field to give up its oil, then several additional millions of dollars must be added.

Even in the form in which it was actually made, with Humble Oil & Refinnig Company acquiring only one-half interest in the leases and no interest in the landowners' one eighth royalty, the Rabb Ridge purchase at the consideration of $20,000,000 represented the largest deal ever made in connection with a Gulf Coast oil field, and it is probably among the largest ever made anywhere in purchasing single oil producing properties.

To bring out perhaps more clearly the stiff terms under which the purchaser was willing to buy the Rabb Ridge property, it may be stated that the deal requires in effect that the purchaser must for a very long period, probably for a large part of the life of the field, pay out over one-third of its gross production in royalties and in payments on the Cullen & West equity, one eighth of the oil as it comes out of the wells going to the landowners, and one-fourth of the remaining seven-eights going to Cullen & West.



Rabb Ridge field (indicated by arrow) in relation to other producing fields, salt domes, and prospects along the Texas coastal plains.

Although Gulf Production Company owns an undivided one half interest in the Rabb Ridge properties, the terms of the deal between Cullen & West and Humble Oil & Refining Company have been simplified in the interpretation made in the foregoing paragraph by regarding the Humble and Gulf interests as separate and independent of each other and as being developed separately. Humble Oil & Refining Company and Gulf Production Company are developing the field on a 50-50 partnership basis, sharing equally in the development, and also in the oil which is being recovered.

Under the partnership plan which is being employed, each of the two companies is at present operating five drilling rigs in the field, and other work is being similarly divided. Since all expenses are paid 50-50 by the two companies, neither undertakes any activity or project without first obtaining the sanction of the other.

That straight partnership basis applies not only to regular field activity but also to related work and activity. Thus the two companies have acted together in building a road three miles northward to Thompsons, on the G. C. & S. F. line. Together the companies have also built a large, neat housing center, placed in an attractive setting among moss-covered oak trees, not far from the Brazos River. The neatly painted, "ready-cut," frame houses of that group include office and warehouse, recreation hall, bunk houses and mess hall for unmarried employes of both companies, and residences for families.

The two companies do not own quite all of the productive acreage at Rabb Ridge, but they hold a very high percentage of it. In the latter part of September, 1932, there was only one producing well in the field, the property of The Texas Company, which was not owned by the Gulf-Humble interests; and only one test outside of operations of the latter concerns was included among drilling wells, that one being an additional test by The Texas Company.

While the Humble-Gulf lease block

of over 7000 acres embraces a large percentage of territory which has been proven or which is likely to prove productive ultimately, it should not be inferred that the field's productive area is expected to be of such large extent. In fields which have been developed in the past in the salt dome region all productive territory usually lies within a circular area from 1½ to 2 miles in diameter, thus embracing from 1500 to 2500 acres.

The Rabb Ridge field as developed to now centers around the center of the John Rabb Survey, and extending north slightly into the Samuel Kennedy Survey and south a short distance into Robert Peebles Survey, it is productive for approximately two miles in the north-south direction and for one mile in the east-west direction, thus covering about two square miles, or somewhat less than 1500 acres. Information which is available now on the 5100-5400 foot oil sand, most important producing horizon in the field, gives indication, however, that the ultimate productive zone will comprise approximately 2500 acres. For while the limits of production have been almost reached on the south and north, they have not been closely approached yet on the east and west, and the field will possibly be as wide from east to west as it is in the opposite direction, that is, about two miles. This assumption is predicated on evidence that salt water underlies oil in the sand at some level between 5325 and 5375 feet, since a well on the south edge of the field shows water intrusion in producing from 5383 feet, while one on the north end of the field, completed at 5322 feet, flowed oil which was free of water but which had temperature somewhat above normal, suggesting that the oil coming from the bottom of the hole had been in close proximity to salt water.

If the field proves productive to the extent of 2500 acres, the above discussed $50,000,000 valuation placed on it will represent a basis of $20,000 per acre, which is of course a remarkably high price for oil land.

Current and Past Development

Late in September, 1932, the field was being steadily exploited further, with 11 drilling rigs in operation, as indicated in previous statements, the area being among the most active of the coastal fields.

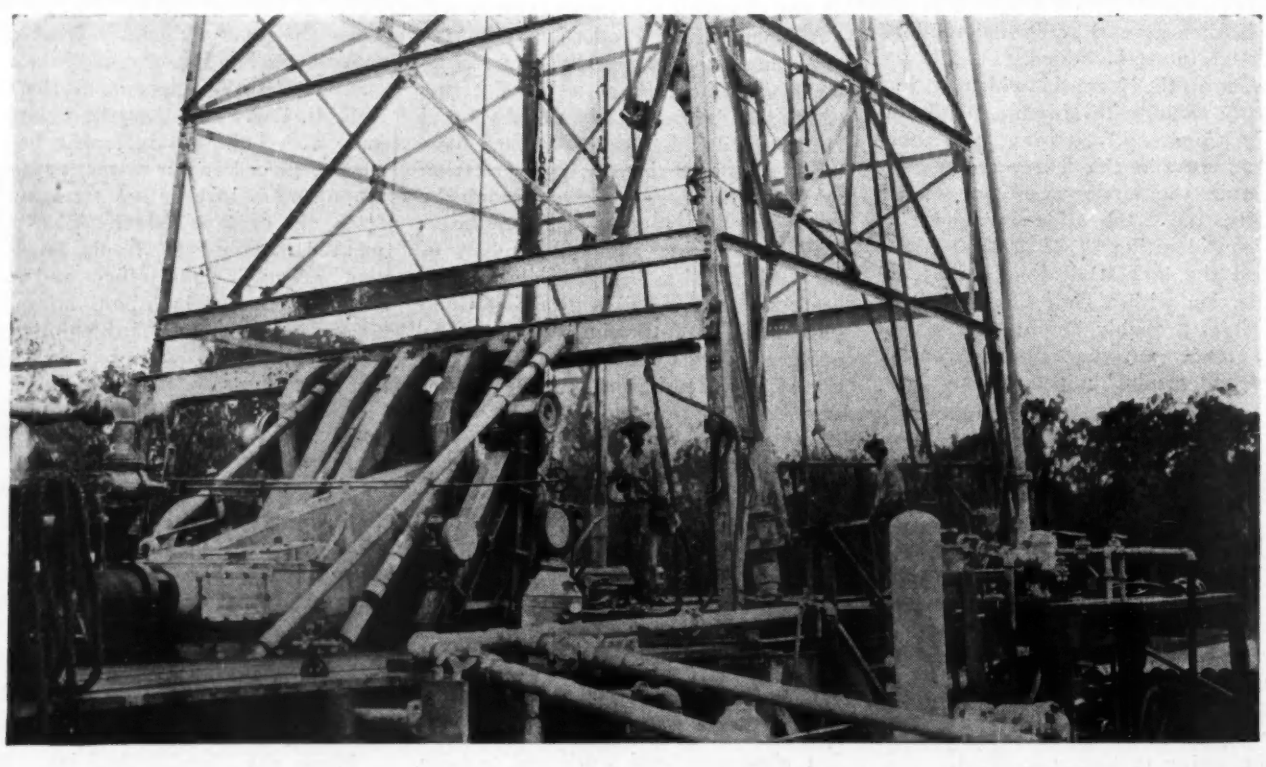
At the same time there had been completed in the field 31 tests, including 29 which had produced oil and two which had never yielded commercial production by reason of gas blowouts. One of those unsuccessful wells ran wild, burned and finally cratered, and the other was junked and abandoned. Among the 29 productive wells, incidentally, there were two which were likewise junked and abandoned because of blowouts occurring in process of deepening from original shallow producing horizons in search of deeper oil sands. Thus every well drilled in the area, from the spudding of the wildcat which became the discovery well to the present writing, has either been completed as an oil producer or has encountered sand containing gas under such high pressure as to result in a blowout ruining the hole. This record of successful completions is extraordinary, and has been possible because of the particularly favorable sand conditions which exist.

Current and Past Production

The 27 wells on production late in September were yielding about 17,000 barrels of oil daily, all flowing naturally through tubing, and output being restricted by chokes. Only two wells were producing at that time from the shallower sands of the field, one having a depth of 3500 feet and the other 4000 feet. The other 25 oil wells were producing from the field's deepest and most prolific sand, found at depths of 5100 to 5400 feet. Among those deep wells were several which had been completed originally in the shallower oil horizons, but which had been deepened because of water-contaminated, lean, or otherwise unsatisfactory production at the higher levels. It had become fairly common practice in the field by then, however, to drill on through the shallower sands without attempting to establish production from them, and consequently most of the deep wells had been completed originally in the 5100-5400 foot sand.

While the shallow wells were yield-

(*Continued on page 40*)



The heavy, steam-engine driven rotary rig and the steel derrick, mounted upon a steel sub-structure seven feet high, are typical of the equipment being used at Rabb Ridge.

Texas Legislature *Considers* *Demand* Provisions On Trial

Austin, Texas.—Convention of the Texas Legislature in January will probably place both the oil and gas industries back in politics, as there are several bills which have been written affecting these industries, which are certain to be introduced.

The recently enacted market demand low will almost certainly come up for amendment in order to iron out any defects that may develop during the coming 60 days. It is well known in Austin that many of the solons who voted for the bill did so in an effort to make the measure immediately effective in order to give the incoming legislature an opportunity to revise it. They were by no means satisfied that the present law should be passed, or that it was in a form that would operate satisfactorily. However, since the industry had requested such a statute, they were willing to give it a trial, but it must be borne in mind that it is distinctly a trial.

The "Divorce" bill, which will prevent producing companies from owning retail filling station outlets, is certain to come up for consideration. This measure was previously introduced by Baily Hardy of Breckenridge. It is designed to prevent the larger companies who have a great percentage of the production, from owning pipe lines, refineries and filling stations, and thus giving a free market outlet for the products of all producers. Major companies own 95 per cent of the filling station outlets in Texas. It is charged that they have caused the failure of many independent refiners, as well as the smaller producers, and it is hoped by sponsors that the bill will remedy this situation.

Another bill that is certain to appear is the graduated production tax bill which has been introduced on two previous occasions by Milton West of Cameron County. It is intended to regulate production and also to increase the state's revenue from oil. The tax is levied at two cents per barrel on wells capable of producing up to 10 barrels per day, three cents on wells capable of producing 10 to 20 barrels per day, and gradually increases to 50 or 75 cents per barrel on the larger producers. Thus it is intended to hold down the production of the flush areas by taxation, rather than by using the methods in force at the present time.

This bill has been approved by the incoming governor, and it should be remembered that the Ferguson group will be in control of the Legislature which convenes in January.

The pipe lines will also come in for their share of governmental regulation, as a bill has been prepared to limit their earnings, similar to the one that was defeated in the first called session of the Forty-Second Legislature.

They have already been declared "public utilities", and this is the next logical step. The solons are prone to overlook the risk involved in the building of a pipe line to new fields where the total production is an uncertain quantity.

The present gas tax of two per cent on the value of the product has not brought in the revenue which might reasonably be expected from such a source, and it is expected that the legislature will place a flat tax of one or two cents per MCF on the production. This proposition was successfully defeated when the present bill was enacted, but in the light of experience over the past year that the law has been on the book, it is believed that the statute will be enacted along the lines outlined above.

A four month's session will begin on January 10, which will give sufficient time for careful consideration of all phases of these bills.

Lobbyists for the oil companies have begun preparations to handle these bills as they appear, but they realize that present economic conditions will have a bearing on the case which has never been present before.

The new group of solons will be determined to alleviate the situation, particularly in raising revenue from those industries which seem most able to bear the load, and it will be made to appear to many of them that the oil industry is in the best condition of any business in Texas.

Congress *Will Be* Requested To Strengthen *Conservation Laws*

Washington, D. C.—Legislation providing for the conservation of oil and gas in the ground, consolidating and protecting the oil lands owned by the government, especially naval petroleum reserve No. 1; extending the provisions of law covering the petroleum reserves to the oil shale and other naval fuel reserves where applicable, and providing that no leases within the reserves shall be granted to foreigners unless reciprocal privileges are granted by their governments to our citizens, will be sought during the present session of Congress by the Navy Department, it is revealed in the annual report of Secretary Charles Francis Adams, just made public.

This legislation was originally introduced in 1930, but failed of action in that and the succeeding sessions. It was again introduced last January, but was not taken up during the session by the House committee on naval affairs.

Discussing conditions in the naval petroleum reserves, the secretary reported that during the fiscal year ended June 30, last, production from leased lands in reserve No. 1 was 1,657,371 barrels of oil, 1,210,818,000 cubic feet of gas and 2,275,-182 gallons of gasoline, from which the government derived a royalty of $381,-240.69. More than 550,000,000 barrels of oil still remain in this reserve, according to government estimates.

No new wells were completed on this reserve during the year and two were abandoned, there being, on the leased area, 50 wells on production and 20 shut down at the close of the fiscal year. On the patented area there were seven oil wells on production.

Production from leased land in reserve No. 2 for the year amounted to 2,270,494 barrels of oil, 3,985,503,000 cubic feet of gas and 16,227,134 gallons of casinghead gasoline, giving the government royalties of $307,852.93.

On the privately held land on June 30 there were 207 oil wells on production and 316 oil and 17 gas wells shut in. On the leased land there were 166 oil wells and one gas well on production with 168 oil and 14 gas wells shut in; 15 wells were being used for gas-injection purposes. The amount of oil still recoverable from the government lands in this reserve under present methods of production is estimated at more than 65,000,000 barrels.

There was no production on reserves No. 3 and 4, the former having been shut down since 1927 and the latter not yet having been developed. Reserve No. 4 is in Northwest Alaska, well within the Arctic Circle, and comprises about 35,000 square miles, contrasting with less than 72,000 acres in the three other reserves.

The government also holds 150,000 acres of oil shale land in reserves.

Unit Operation *of Government Oil Lands* Accomplished *Under* Hoover

Washington, D. C.—Four years of progress under the Hoover administration are reviewed by Secretary of the Interior Ray Lyman Wilbur in what will be his last annual report, just made public.

In the realm of oil, the secretary points out, "we adopted a policy of conservation of oil and gas on the public domain; stopped speculation; weeded out unsatisfactory prospecting permits; held the public domain's oil reserves against waste during a period of overproduction; and, this accomplished, reopened the public lands to prospecting under unit operation stipulations which will insure orderly production and maximum recovery from our irreplaceable reserves.

"We asked and secured the passage of the Walsh Act authorizing unit operation of oil fields on the public domain; secured the cooperation of operators in Kettleman Hills in harnessing that major field in a unit agreement by which gas waste was cut from 450,000,000 to less than 10,000,000 cubic feet a day, and oil is now being produced at an economic and orderly pace. We asked and secured the passage of an act allowing extension of oil prospecting permits, and were thereby enabled to halt drilling and production otherwise required by statute.

"In 1929 we advanced a proposal for interstate cooperation in oil conservation through the balancing of production against a common national demand under an interstate compact. In 1930 was inaugurated the first system of national planning in the oil industry, the forecasts of supply and demand rendered by the Federal Oil Conservation Board's voluntary economic committees. Today the interstate cooperation proposal, advanced on a nonpartisan basis by this department and the governors of the oil-producing states through the oil states' advisory committee, supported by the industry, is in active, although informal, operation. The oil industry is in an increasingly sound position.

"Oil shale lands have been freed from illegal claims and together with the vast coal resources of the public domain will be conserved as a future national supply."

Kettleman Hills

Discussing the Kettleman Hills agreement, the secretary comments that the "usual minority" of outside owners has insisted on producing more than their proportion of oil and the government's lessees have shown "a fine spirit of cooperation" in restricting their own production to keep the field's total within allowable limits.

"Relations between the government and its lessees in this field have on the whole been excellent and the unit plan has operated successfully," Secretary Wilbur declares. "There has been a fundamental difference of opinion between the government and the lessees as to the basis upon which government royalties should be computed, and it is probable that litigation of a test case will be required to set this important issue permanently at rest.

"The issue is whether the values on which royalties are computed shall be fixed by the prices the lessees receive (being in some cases prices quoted in transactions between two departments of the same company) or whether the value shall be fixed by the secretary. We have endeavored to lay the basis for equitable solution through litigation."

Washington, D. C.—Despite a general slash in all federal appropriations for the fiscal year beginning July 1, next, the 1934 budget, just submitted to Congress by President Hoover, carries an increase of $1252 in the fund for the Federal Oil Conservation Board. That body is to be given $11,252 as compared with a total of $10,000 for the current fiscal year.

Most of the increase, $1000, is to permit the use of temporary employes, and the remaining $200 is for contingent expenses.

Oil and gas investigations by the bureau of mines of the Department of Commerce will be further reduced as a result of a cut of $26,000 proposed in this fund, from $180,000 to $154,000.

The Navy Department's fund for operation and conservation of the naval petroleum reserves also is reduced, from $80,000 to $68,932, but the budget continues the provision making available, if necessary, up to $10,000,000 for protection of reserve No. 1 by drilling wells if no satisfactory agreement can be made with adjoining landowners not to drill offset wells for the purpose of producing oil.

President Hoover *Asks Congress To Abolish* Federal Oil Board

Washington, D. C., Dec. 9.—Transfer of the powers and duties of the Federal Oil Conservation Board to the Bureau of Mines of the Department of Commerce and abolishment of the board, and transfer of the General Land Office from the Interior Department to the Department of Agriculture, are proposed by President Hoover in a plan of government reorganization submitted to Congress Friday.

Transfer of the oil conservation board, the President explained, is part of a program to bring into a single department all activities affecting industry and trade. "The duties of the board," it was pointed out, "are primarily of an economic character, although the purpose of its activities is conservation, with a view to national security. The Bureau of Mines is a scientific organization and covers the general field of mining, including economic as well as technologic features of the industry. It has extensive activities dealing with petroleum and natural gas. In the technologic branch, the Bureau has a division of petroleum and natural gas which deals with all the technical phases of the industry, and in the economics branch there is a petroleum economics division which deals with economic problems as related to conservation, the problems of supply and demand, etc. In this division studies are also made of oil production and refining in foreign countries through cooperation of the United States consular officers.

"A considerable part of the information now considered by the Federal Oil Conservation Board is furnished by the Bureau of Mines. It appears that the Bureau of Mines is well qualified and equipped to conduct the activities of the board. Under the proposed plan the president would not be deprived of the direct contact and advice of the board members, since they are members of his cabinet. There seems no logical reason to retain the board as an independent establishment."

The General Land Office would be made a part of a division of land utilization to be created in the Department of Agriculture, it being pointed out that its work deals directly with problems concerning the public domain and the conservation of the natural resources of the public lands.

MEN IN THE INDUSTRY'S NEWS

J. A. BROWN, president of General Petroleum Corporation, has been nominated for re-election as president of California Oil and Gas Association. C. S. Jones, vice president of Rio Grande Oil Company, was nominated for vice president, and H. L. Westbrook, vice president of Belridge Oil Company was nominated for treasurer. Nominations for directors included R. A. Broomfield, Barnsdall Oil Company; E. S. Dulin, Byron Jackson Company; E. B. Gilmore, Gilmore Oil Company; H. H. Hillman, Hillman-Kelly, Inc.; William F. Humphrey, Associated Oil Company; K. R. Kingsbury, Standard Oil Company; George Legh-Jones, Shell Oil Company; Ralph B. Lloyd, Lloyd Corporation; William C. McDuffie, Pacific Western Oil Company; A. B. Macbeth, Southern California Gas Company; A. C. Mattei, Honolulu Oil Corporation; S. B. Mosher, Signal Oil & Gas Company; C. E. Olmsted, The Texas Company; W. B. Pyron, Western Gulf Oil Company; William Reinhardt, Kettleman North Dome Association; F. C. Ripley, Chanslor-Canfield Midway Oil Company; L. P. St. Clair, Union Oil Company; and H. B. Simcox, Continental Oil Company.

STANLEY HEROLD, petroleum engineer and geologist, will give a winter course on "Principles of Production", through the downtown night division of the University of Southern California, beginning January 4. The course will be of interest to executives and workers in the oil industry.

H. E. BRITZMAN, formerly director of public relations for Rio Grande Oil Company, has been made director of sales for the company.

W. F. HUMPHREY, president, and L. C. Decuis, chief geologist of Associated Oil Company, recently accompanied Axtell J. Byles, president of Tidewater Associated Oil Company, on a tour of inspection of company and other properties in California.

K. R. KINGSBURY, president of Standard Oil Company of California, is expected to return from New York before the holidays, after an extended Eastern business trip.

MEMBER FEDERAL BOARD

—Underwood and Underwood

COMMANDER THOMAS MORAN, U. S. N.

COMMANDER THOMAS MORAN, acting director of Petroleum and Oil Shale Reserves of the United States Navy Department, has been appointed a member of the Technical and Advisory Committee of the Federal Oil Conservation Board, to succeed the late Rear Admiral Frank T. Chambers. Announcement of the appointment was made November 30 by Secretary of the Interior Wilbur, chairman of the board. Membership of the committee now includes Northcutt Ely, assistant to Secretary Wilbur, chairman, Commander Moran, Major General Lytle Brown of the War Department, Scott Turner, director of the Bureau of Mines, and Ralph W. Richard of the Geological Survey.

RUSSELL S. KNAPPEN, technical advisor to the executive department, Gypsy Oil Company, Tulsa, has been named to fill the unexpired term of Dr. Sidney Powers whose recent death left open one of the council memberships of Geological Society of America. The society will meet this year on December 28, 29, and 30 at Cambridge, Massachusetts. Ira H. Cram, district chief geologist for Pure Oil Company, and Fanny C. Edson, micropaleontologist for Shell Petroleum Corporation, both of Tulsa, have been made fellows in the society. This recognition comes through outstanding geological work. It is reported that Dr. C. K. Leith will be the next president.

HUGH PIERCE, superintendent for Wofford Drilling Company, is able to be in the field again after an automobile accident more than a month ago.

T. R. GOEBEL is now executive assistant of Skelly Oil Company, succeeding W. D. Hume, who was recently made general auditor for the company. Goebel will retain direction of the gas contract department and also assumes the responsibility of crude oil purchasing.

A. M. BUTCHER, formerly purchasing agent for Indian Territory Illuminating Oil Company at Bartlesville, Oklahoma, now is field engineer for the Boston Woven Hose and Rubber Company of Cambridge, Mass. Mr. Butcher will make his headquarters in Tulsa.

NEW KENDA EXECUTIVE

A. H. BELL

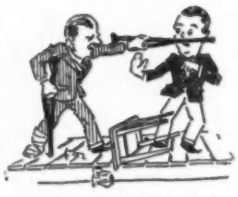
A. H. BELL, general superintendent in California for Continental Oil Company, has been elected vice president of Kettleman North Dome Association, to succeed Roy E. Collom whose recent promotion to new duties takes him to the Ponca City headquarters of Continental Oil Company. Mr. Bell has wide experience in both production and refining in California, Mid-Continent and Mexico.

EAST TEXAS PRORATION ALMANAC

PRORATION BY WELL POTENTIALS

March 24-28, 1931.—Texas Railroad Commission held hearing at Austin, on which first East Texas proration order was to be based.

April 4, 1931.—Railroad Commission issued its first proration order for the Joiner, Kilgore and Longview fields, which were not yet known definitely to be parts of the same big field. This order was to be effective April 10 to May 1, with provisions for increased allowables after latter date, but with original total quota set at 90,000 barrels daily — Joiner 40,000 barrels, Kilgore 35,000, and Longview 15,000 barrels. Proration was to be based on division of Joiner and Kilgore fields into 20-acre units and Longview into 40-acre units, and upon potential production of wells as determined by three-hour gages, through 11/16-inch chokes on 2½-inch tubing. Separate umpire for each area was chosen. Commission said allowable might be raised above the 90,000 barrels originally set in event potentials should justify.



Period of Personal Fights and Threats

When the April 4 order was announced there were about 100 producing wells in the field, yielding around 125,000 barrels daily, and about 385 additional tests were under way.

Taking of potentials was slow and difficult, and was still in progress as late as April 20.

This initial proration order was immediately attacked in the courts by East Texas operators, including Carl Estes, newspaper publisher and anti-proration leader, with former governor Dan Moody as attorney for Estes and associates. The order was never observed.

April 23, 1931.—Umpires having determined potentials under April 4 order, the commission in accordance with promise held out at that time decided, in view of high potential production indicated and in an effort to enlist cooperation of operators, to raise total allowable to 130,000 barrels daily, including Joiner 60,000 barrels, Kilgore 40,000, and Longview 30,000 barrels, those areas still being considered separate fields.

This 130,000-barrel restriction of the commission was placed in effect April 23, and was observed by only part of the operators, the observance lasting only one day, proration violators forcing complete lifting of lid. On April 24 the area was producing without restriction.

VOLUNTARY EFFORT—THE CRANFILL PLAN

April 29, 1931.—Commission issued order, to be effective May 1, setting total allowable at 160,000 barrels daily, including Joiner 65,000 barrels, Kilgore 60,000 barrels, and Longview 35,000 barrels. The order was disregarded generally, some operators obtaining court injunctions and others neglecting to take such precautions in disregarding proration rules. Completed wells had increased over 350, and were yielding around 250,000 barrels daily.

June 20, 1931.—Commissioner's proration efforts having failed, operators on June 20 inaugurated a voluntary program, known as the "Cranfill Plan," under which production was restricted to 300 barrels per day for each 20 acres, with special provisions for smaller tracts. It was hoped production would be held by this program to about 250,000 barrels daily for the field. Within one week it became evident that this plan could not succeed, as output was around 350,000 barrels daily from approximately 1000 wells.

Cranfill Plan Fails

COMMISSION TRIES 20-ACRE UNIT BASIS

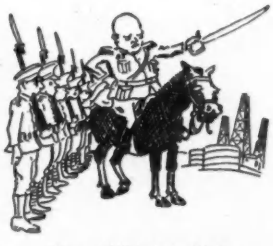
July 2, 1931.—In deference to large numbers of operators who had favored the "Cranfill Plan," the commission issued new order July 2, to be effective for 90 days with provision made for certain changes, placing allowable at 250,000 barrels daily, to be divided proportionately among producers on basis of 20-acre units (or fractional units). The order eliminated well potentials and also the division of the field into three parts as formerly. This order suffered the same dismal fate as its predecessors, except that more wells and operators were now involved, and violations of proration were more flagrant.

Violations are More Flagrant

FIRST SPECIAL SESSION—MARTIAL LAW

July 14, 1931.—Due primarily to the chaotic conditions in the East Texas field, a special session of the Texas legislature convened July 14 in response to a call of Governor R. S. Sterling, for considering passage of new conservation law. The session continued until August 12, when a new law was passed, to become effective immediately.

August 12, 1931.—Passage of new conservation law and immediate effectiveness given the law through signature of governor voided former conservation statute and left an hiatus in East Texas proration efforts, since commission was required under new law to give 10 days' advance notice for hearing upon which to base new conservation order. Such hearing was set for August 25 at Austin. Meanwhile production in East Texas soared, operators trying to obtain maximum recovery possible before inauguration of new proration program. For several days immediately prior to August 17 production of the field was around or above 1,000,000 barrels daily, from approximately 1600 wells.



General Wolters Takes Command

EAST TEXAS PRORATION ALMANAC

August 17, 1931.—The four counties in which the East Texas field was located were placed under martial law, and all producing wells, numbering about 1600, were closed in. Thus the field was brought under control of the governor, with about 1100 militia men enforcing the martial law orders. The field was kept closed-in for 19 days—until September 5.

COMMISSION APPLIES PER WELL QUOTA

September 5, 1931.—Shut-down of production was lifted, although martial law was continued in field, a new proration program being instituted under the new Texas conservation law, with the railroad commission in charge, aided by its own employes and also the troops.

Under the new program all wells in the big field were given equal daily production allowances. The per-well quota was first set at 225 barrels daily, but it was subsequently reduced repeatedly in compensation for completion of numerous additional wells the allowances being fixed during a period of about three months with the idea of holding the field to about 400,000 barrels daily, and thereafter to about 325,000 barrels per day.

Militia Keeps Wells to Allowable

On September 5 the per-well allowable was 225 barrels daily, but subsequently reducing the quota to 185 barrels and then to 165 barrels.

FEDERAL COURT INTERCEDES—MARTIAL LAW

October 13, 1931.—On this date, when the 165-barrel quota was scheduled to go into effect, the commission along with the militia was enjoined in federal court from prorating the wells of a group of East Texas operators, including Eugene Constantin and J. D. Wrather. In consequence Governor Sterling on that same date took proration out of the hands of the commission, freeing it from danger of being in contempt of court, and declared full martial law, continuing the 165-barrel allowable of the commission. The governor subsequently made further reductions in the per-well daily allowable, until he had reduced it, effective February 5, 1932, to 75 barrels.

January 4, 1932.—Meanwhile Governor Sterling had himself been made a defendant in the Constantin-Wrather suit, and when it came up for trial at Houston January 4, 1932, the sole issue was the validity of proration as enforced under martial law.

February 18, 1932.—Three judge federal court which had heard evidence at Houston beginning January 4, handed down a decision that martial law proration was illegal. Although made public at Tyler February 18, the court decision was not effective until February 26, through formal filing of court decree. That decision was appealed by Governor Sterling to the United States Supreme Court, where it came up for hearing November 14, 1932, and has been taken under advisement by the nation's highest tribunal. Meanwhile the governor still maintains a small body of troops in the field for cooperating with the railroad commission except where injunctions apply against military interference.

Federal Court Takes Up Fight

While declaring martial law enforcement of proration illegal, the court opinion in the Constantin-Wrather suit made it clear that authority of the railroad commission to enforce proration yet remained to be decided by the courts.

COMMISSION AGAIN IN THE SADDLE

February 25, 1932.—Having held a hearing of East Texas operators in Austin February 12, and furthermore having been exempted from court interference in the decision of February 18 declaring martial law proration invalid, the commission again assumed leadership in fixing proration allowances, adopting temporarily the 75-barrel quota which had been fixed February 5 by the governor. Effective March 16 the commission cut the allowable to 72 barrels, acting on evidence it had adduced at its February 12 hearing indicating the field should be held to 325,000 barrels maximum daily production. To achieve that restriction, per-well allowances were subsequently reduced at semi-monthly intervals until the quota was brought down to 43 barrels for the latter half of August, 1932.

Commission Takes Up Where Martial Law Ends

September 1, 1932.—Allowable was increased from 325,000 barrels daily to 375,000 barrels, and accordingly, the per-well quota was raised for the first half of September from 43 to 50 barrels daily.

October 15, 1932.—In a state-wide curtailment move, the railroad commission cut the East Texas field allowable back from 375,000 to 335,000 barrels daily, and fixed allowable output for the latter half of October at 40 barrels daily as against 44 barrels previously allowed. The 40-barrel quota was still in effect late in November, the normal semi-monthly readjustments of allowables having failed to materialize on November 1 and November 15 in view of a federal court decision made public October 24, 1932.

FEDERAL COURT HOLDS ORDERS INVALID

October 24, 1932.—A three-judge federal court on October 24 filed an opinion at Sherman in a suit which had been heard on its merits at Houston September 19 through September 22, the opinion declaring the railroad commission's East Texas proration program invalid. It was pointed out that whereas the Texas law expressly charged the commission with preventing physical waste that body had in fact sought to prevent economic waste by restricting production to market demand.

This suit against the commission was brought by Peoples

EAST TEXAS PRORATION ALMANAC

Petroleum Producers, Inc., and six other plaintiffs. The opinion provided that a decree should be presented to the court for entry within 15 days. The Texas attorney general's department stated: "Until such decree is approved and entered the commission is not enjoined from enforcing its orders against the plaintiffs in the federal court litigation. When the decree is entered, it will not restrain the commission from enforcing its proration orders in East Texas against any operator other than the plaintiffs." Defendants stated they would appeal the case to the United States Supreme Court.

Commission Orders Overthrown by Federal Court Decision

The suit of the above plaintiffs and others had been heard on the facts in the case before the same three judge court at Houston on May 30, May 31, and June 1, 1932, and following that hearing the plaintiffs were denied the temporary restraining order which they sought against the railroad commission, the court decision being made public about July 20, 1932.

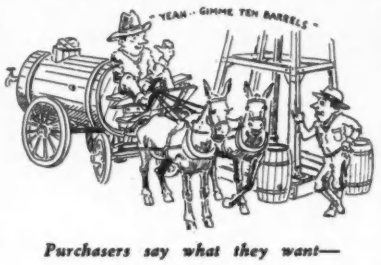
SECOND SPECIAL SESSION—MARKET DEMAND LAW

November 2, 1932.—Governor R. S. Sterling called the second special session of the Texas legislature to deal with proration for the East Texas field, following the court decision announced October 24 declaring the railroad commission's proration program invalid. The legislature convened November 3.

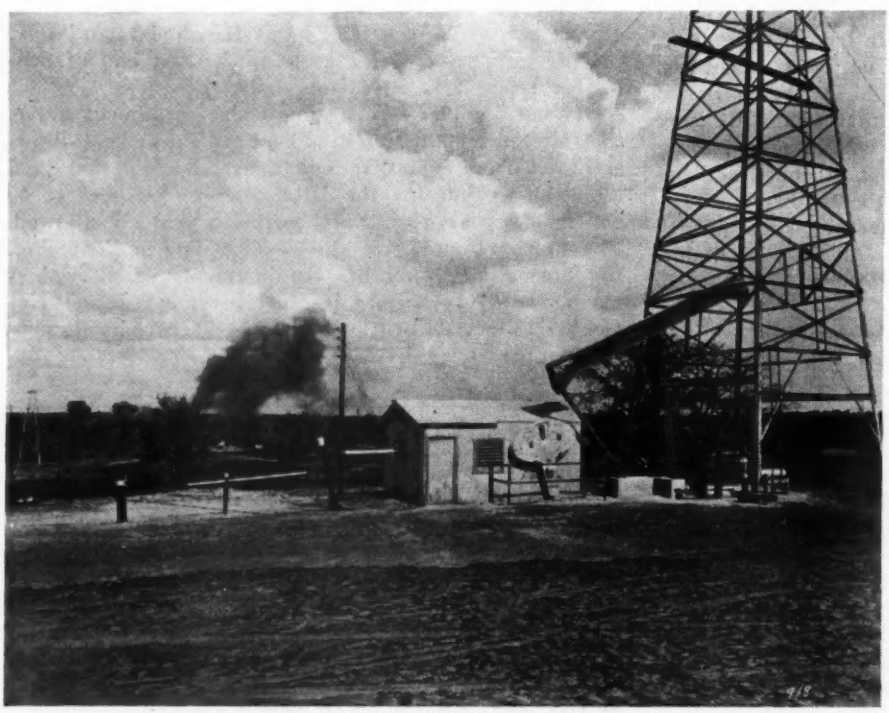
November 12, 1932.—The special session of the Texas legislature late November 12 passed a new oil conservation law to take the place of that under which the railroad commission's East Texas proration program was held invalid. The new law was patterned after the Oklahoma statute, which permits regulation of production to conform with market demand, and which has been upheld by the United States Supreme Court. The new Texas law became immediately effective.

November 26, 1932.—A state-wide hearing of oil operators was scheduled by the railroad commission to be held in Austin November 26, preparatory to issuance of first proration orders under the new "market demand" law.

November 29, 1932.—Under new "market demand" law, railroad commission issued a new East Texas order, effective December 1, 1932, to April 1, 1933, fixing field's total allowable at 325,000 barrels, two-thirds of such total to be allocated on strict per-well basis, each well in field sharing equally, and remaining one-third to be divided according to a formula taking into account acreage and bottom hole pressure factors.

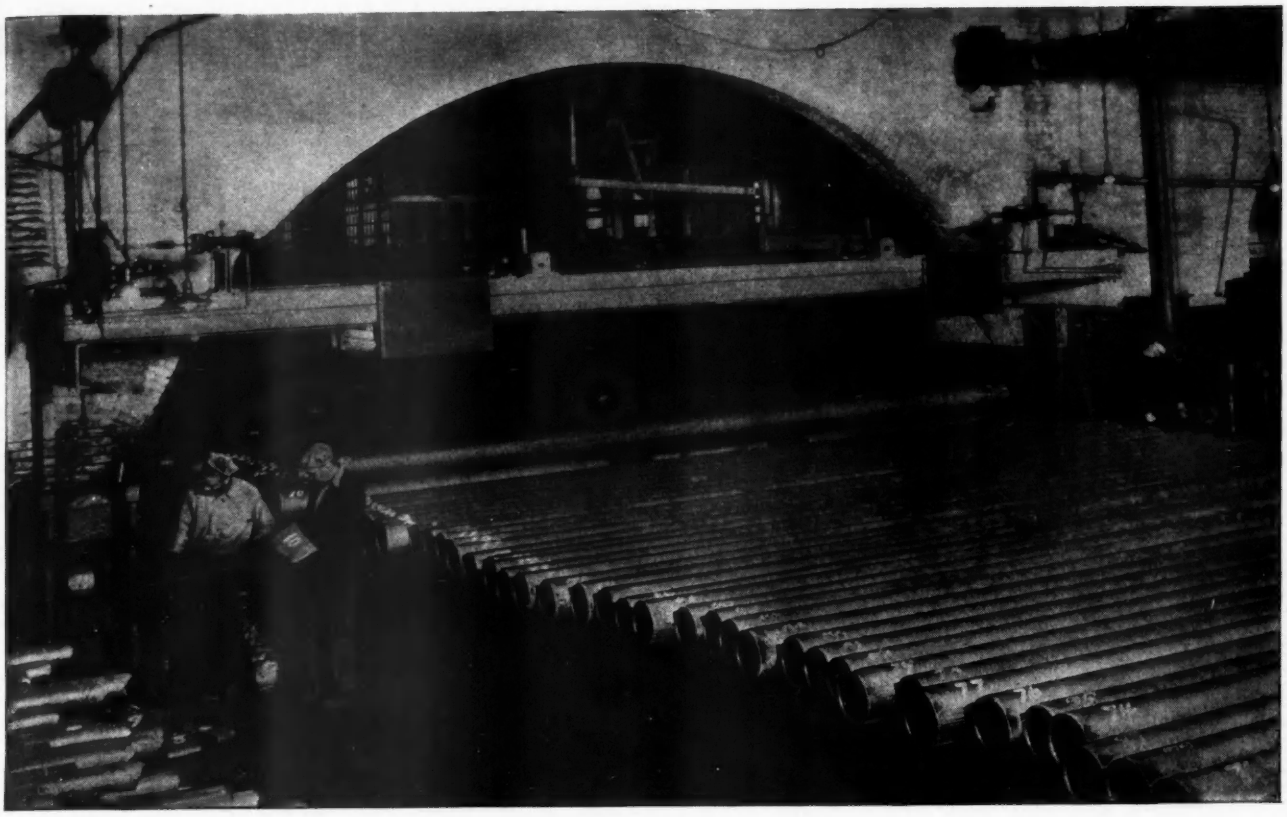


Purchasers say what they want—



When East Texas Goes on the Pump

The Sun Oil Company's E. L. Walker 1, the company's first pumper in the East Texas field. The well is equipped with a Lufkin Foundry and Machine Company 5½" Herringbone Unit, equipped with an extra crank for pulling two or more wells.



"CHESTER" Inspection . . .

The above view shows the famous "Crop End Crusher Test". The crop ends are flattened down with the weld on one side to 1/3 the outside diameter of the pipe. This tests the weld.

The flattened test is then stood on end and mashed flat subjecting the steel to a reverse bend. This will disclose any laminations or other defects.

Just one of the several tests that help maintain the high "Chester" standards.

Policy:

The South Chester Tube Company manufactures nothing but tubular goods and its whole organization is devoted entirely to the making of quality pipe.

Chester makes all classes of Genuine Wrought Iron Line Pipe and Copper Bearing Steel Pipe

SOUTH CHESTER TUBE COMPANY, Chester, Pa.

District Sales Managers

W. E. Gibson,
901 Columbia Bank Building,
Pittsburgh, Pa.

H. A. Morse,
30 Church Street,
New York City, N. Y.

J. P. Cooney,
715-716 A. G. Bartlett Bldg.
Los Angeles, Calif.

J. P. Steele,
217 Petroleum Building,
Fort Worth, Texas

District Offices

J. D. Swartz,
1231 S. Evanston Street,
Tulsa, Okla.

E. L. Moseley,
2218 Mills Street,
Houston, Texas

DISTRICT WAREHOUSES:
Houston, Texas; Thenard, Calif.; San Francisco, Calif.

Distributors

United Pipe & Supply Co., Charleston, Danville, West Hamlin, W. Va.; Paintsville, Ashland, Allen, Prestonburg, Ky.

Prichard Supply Co., Mannington, W. Va.; Mather and Waynesburg, Pa.

LeValley, McLeod, Kinkaid Co., Inc., Elmira and Olean, New York.

Kane Supply Company, Kane, Lawrenceville, Brookville, Pa.

Pelican Well Tool & Supply Co., Shreveport, La., Kilgore, Texas.

Louisiana Iron & Supply Co., Shreveport, La., Henderson and Kilgore, Texas.

Great Northern Tool & Supply Co., Billings and Kevin, Mont., Kemmerer and Cody, Wyo.

Star Drilling Machine Co., 550 Clinton Street, Portland, Oregon and Akron, Ohio.

Stephen H. McCabe, 508—4th St., San Francisco, Calif.

Barde Steel Company, Seattle, Wash.

CHESTER

STEEL CASING LINE PIPE

SPECIALISTS IN CASING FOR DEEP WELL DRILLING

SHELL PRODUCTS

Working to self-imposed specifications more rigid even than those set up by the United States Bureau of Standards, Shell technologists supervise the production of a complete line of petroleum products, every item of which can be depended upon, not merely to meet, but to exceed the most exacting requirements of the American motorist; the American manufacturer.

SHELL CRUDE OIL PRODUCTION

Arkansas
California
Kansas
Louisiana
New Mexico
Oklahoma
Texas

SHELL REFINERIES

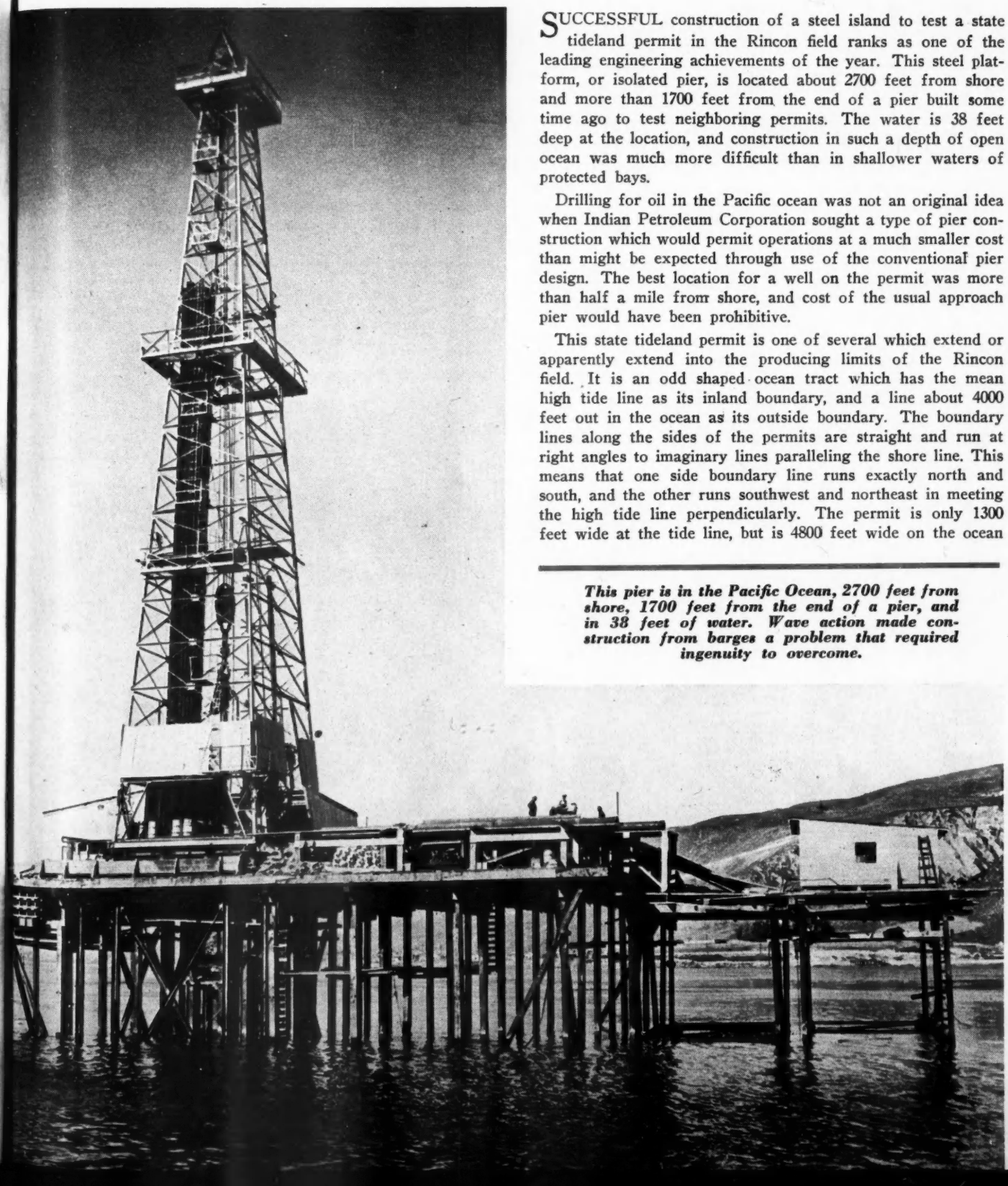
Arkansas City, Kansas
Coalinga, Calif.
Dominguez, Calif.
East Chicago, Ind.
Houston, Texas
Martinez, Calif.
Norco, Louisiana
Wilmington, Calif.
Wood River, Ill.

Derrick Foundation *On Isolated Ocean* Pier In 38 Feet of Water

SUCCESSFUL construction of a steel island to test a state tideland permit in the Rincon field ranks as one of the leading engineering achievements of the year. This steel platform, or isolated pier, is located about 2700 feet from shore and more than 1700 feet from the end of a pier built some time ago to test neighboring permits. The water is 38 feet deep at the location, and construction in such a depth of open ocean was much more difficult than in shallower waters of protected bays.

Drilling for oil in the Pacific ocean was not an original idea when Indian Petroleum Corporation sought a type of pier construction which would permit operations at a much smaller cost than might be expected through use of the conventional pier design. The best location for a well on the permit was more than half a mile from shore, and cost of the usual approach pier would have been prohibitive.

This state tideland permit is one of several which extend or apparently extend into the producing limits of the Rincon field. It is an odd shaped ocean tract which has the mean high tide line as its inland boundary, and a line about 4000 feet out in the ocean as its outside boundary. The boundary lines along the sides of the permits are straight and run at right angles to imaginary lines paralleling the shore line. This means that one side boundary line runs exactly north and south, and the other runs southwest and northeast in meeting the high tide line perpendicularly. The permit is only 1300 feet wide at the tide line, but is 4800 feet wide on the ocean



This pier is in the Pacific Ocean, 2700 feet from shore, 1700 feet from the end of a pier, and in 38 feet of water. Wave action made construction from barges a problem that required ingenuity to overcome.

end. The inside tide line boundary is not straight, because of the curve in the shore line. These permits often assume very odd shapes, a curve in the shore line throwing the side boundary lines either in or out from a parallel course. They are granted by the State of California.

Indian Petroleum Corporation has only a limited time in which to develop the Shudde permit. Under the terms of the state lease, a discovery must be shown soon after the first of the year, or the permit reverts to the state. Extensions are often granted, but a permit lost under present conditions probably would become state property forever. Sentiment is largely against granting of permits near cities, but the Rincon field is about 12 miles from the nearest important town.

Cost of construction of the conventional type of approach pier has been too high for an application of the same type to a wildcat location 2700 feet from shore. Indian Petroleum Corporation finally decided on the construction of a steel island at a fraction of the cost of a full length pier, and awarded the contract to Robinson-Roberts Company of Los Angeles.

Construction of a rectangular steel island, or platform, in 38 feet of open ocean naturally presented many problems which would not have been experienced had the location been reached by an unbroken approach pier from the shore. The main object was to provide a well foundation which would withstand the heavy wave action and carry a sufficient load with a full safety factor. The cost had to be in line with the thought that the Rincon field might not extend so far into the ocean.

The first problem was to provide a place from which piles could be driven. A pile driver on a floating barge would have pitched and rolled, and obviously could not be depended upon for work in the open ocean. This problem was the one which divided engineers on the wisdom of such an undertaking.

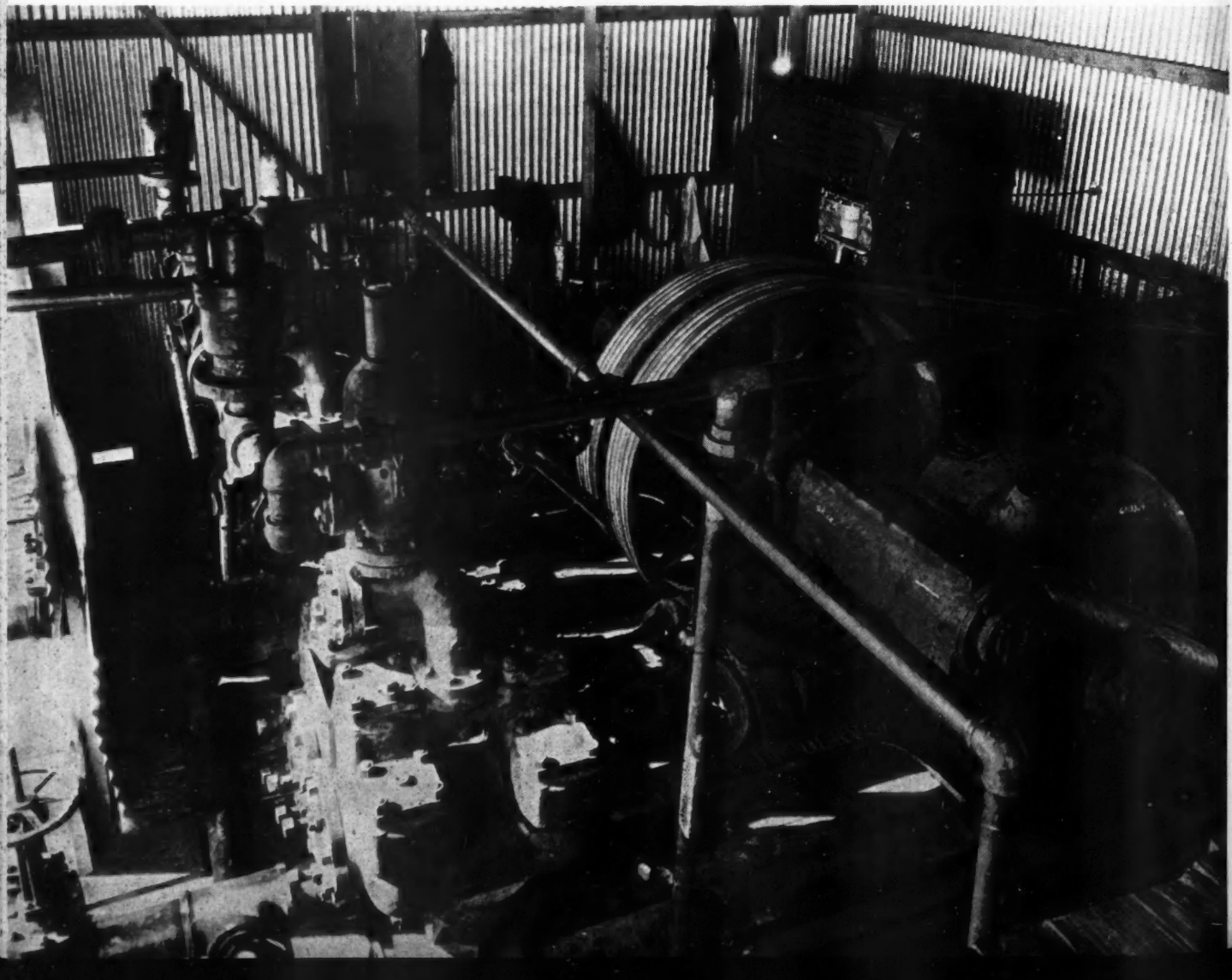
To overcome the lack of a solid foundation from which to drive the piles, four structural steel towers were built. The corner legs of this false work were 60 feet long and the steel weighed 30 pounds per foot. The legs were spaced 20 feet apart, and the skeleton structure was 20 feet square when completed. A derrick barge was used for towing these towers to the location where they were built. The four towers were placed side by side and provided an area about 45 feet square. This gave a suitable structure upon which to work, and the preliminary assembly proved the feasibility of such a project in 38 feet of water.

The skeleton falsework became the center of operations, the caps, skids of the pile driver, ladder braces, gins and a hoisting engine having been landed. The platform also provided ample room for water tanks, fuel drums, a compressor and a complement of small tools.

The piling for the rectangular wharf to surround the rig foundation was driven from the skeleton false-work with little difficulty. The loading and unloading of the 66-foot steel piling, weighing almost 4000 pounds each, was not an easy task where the ocean was rolling and pitching.

Spotting of the long steel piling on the ocean bottom was a difficult problem to solve. The original idea was to spot the piling with an instrument and drive each pile to refusal

Mud pumps installed for drilling on pier in the Pacific Ocean. These two pumps are driven by a 100 horsepower gasoline engine. All drilling operations are gasoline powered.



View of Indian Petroleum Corporation's pier from the shore. The isolated structure is 1700 feet from the end of General Petroleum Company's long pier in the foreground.

into the hard shale, but it was reasoned that such a method of procedure might not be successful. The sand and shale should hardly be expected to take the piling in a true course without guides of any kind. Under the original conception, the piling was to have been tied and braced into an integral unit by a diver who would make the necessary underwater measurements.

It was soon decided that the above method of spotting and driving of piling would not be successful, as the steel might wander down a hard formation without guides. Something much more definite and exact had to be developed.

Construction of a structural steel template of the exact size of the derrick foundation solved the problem. This heavily reinforced guide or model was built to provide a place through which the individual piles could be driven. The rig piers were each composed of four vertical H-columns, and openings for 1 piling were fabricated. The central ring of piling around the well location consisted of eight piles and formed an important part of the supporting medium. This ring of piling centrally disposed of the corner piers. The caisson was given a place inside the central ring.

The template therefore was made to provide position and serve as a guide for the 16 corner piles, the inside ring of eight piles, and the caisson. This entire structural steel guide was fastened and welded together to make one unit. The connecting members holding the pile and caisson keeper were electrically welded. The completed template was lowered with the derrick barge to the bottom of the ocean. A diver was lowered to inspect its position and to make necessary adjustments.

Each heavy H-beam pile was lowered to its position in the pattern or template and guided by a diver. Each pile was driven to refusal. The spacing was uniform after driving was completed and positive symmetry was accomplished. The piles were driven through surface sand and into a very hard shale. Penetration averaged eight feet and the shale afforded a very safe anchoring medium.

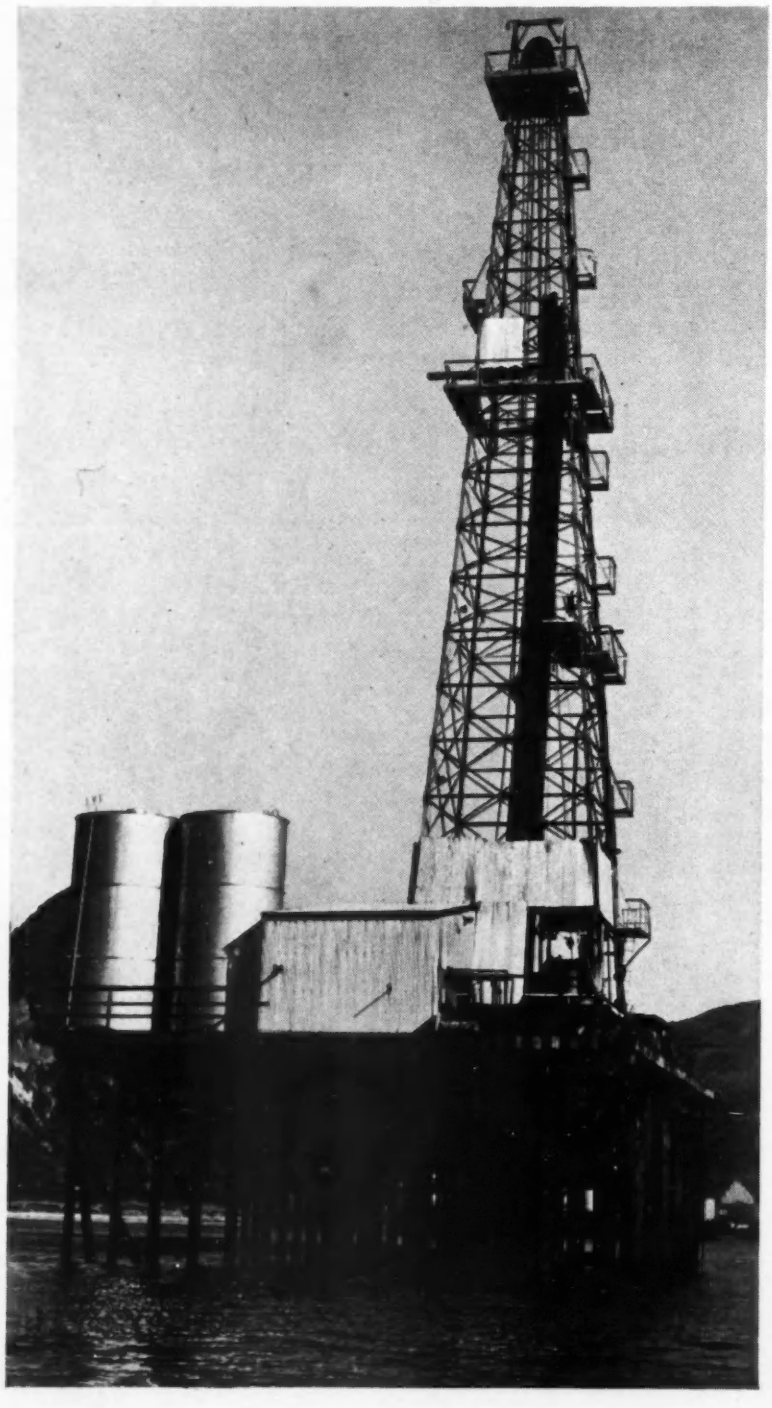
The sway bracing was attached to square clamps which were designed to encircle the four piling of each corner pier. Within each clamp, three one fourth by six-inch steel plates were welded to surround each pile. The first clamps were placed near the bottom of the ocean to take the lower ends of the sway braces. Gusset plates were welded and adjusted to the clamps, each of these plates providing a hole for the pin which connected the diagonal.

The assembled clamp was fitted over the four piles of a corner pier by means of the derrick barge. After engaging the piling, the clamp was lowered to the water level and held in place temporarily with a wire cable. Four clamps were similarly assembled for each of the groups of four piers. The diagonals of the lower assembly were attached with the pin connections. These diagonals were also lowered and held temporarily suspended with cables.

The central clamp was designed to play a very important part in the bracing system. Its position was to be 30 feet

from the ocean bottom. This clamp was an exact duplicate of the template which served as a guide on the bottom of the ocean, except that it included gusset plates to which the diagonals were attached. The intermediate bracing was designed to eliminate any tendency toward twisting. This heavy integral clamp was fitted and lowered over the piling to a point where the diagonals were tied off and held in this position until these cross members were fastened. The lower and center clamps were released from their suspended position and the whole bracing assembly dropped to its final position at or near the bottom of the ocean. Dropping of such an assembled bracing could not have been accomplished had the piling been irregularly spaced or out of position.

End view of the pier. The vibrating mud screen, pumps and tanks are on this end.



Use of the bottom template and the central clamp provided two guides for the caisson, one on bottom and another about 30 feet from bottom. The caisson was placed in these guides, but it was not necessary to drive the tube into position. It was rocked into position in the soft shale by the ocean swells which swept toward the shore.

Fabrication and welding of the steel members of the rig floor and scupper deck followed assembly of the lower bracing. The caisson was trued and the conductor pipe driven. A tremie pipe was used for cementing in the conductor pipe. The heavy central clamp was about six feet under water, and it was necessary to use a diver in pinning the diagonals to their gussets. Heavy turnbuckles were welded to the I beams below the scupper floors for attaching the upper diagonals.

Two heavy steel plates were provided for each pile, a diver going down to bolt these steel plates to the piling immediately above the lower clamp. They were securely attached, and after the 16 piling had been fitted with the clamps, the bracing assembly was then ready for tightening. This tension was obtained by use of tongs on the turnbuckles.

In building the structure, strength with a minimum resistance to wave action was the goal. The relative resistance of steel piling, as compared to that offered by heavy concrete caissons for supports, was very low. The object was to build a structure which would carry a great load, and at the same time withstand the wave and swell action of the open sea.

The finished platform is 60 by 90 feet. The floor elevation is 23 feet and two inches, while the elevation of the derrick base is 30 feet. Due to the limited floor space, several unique installations were made.

The derrick is 106 feet tall and has a 24-foot base. It is proportioned to reduce leverage and a top-heavy effect. The total height of the substructure and rig is 136 feet from the bottom of the ocean.

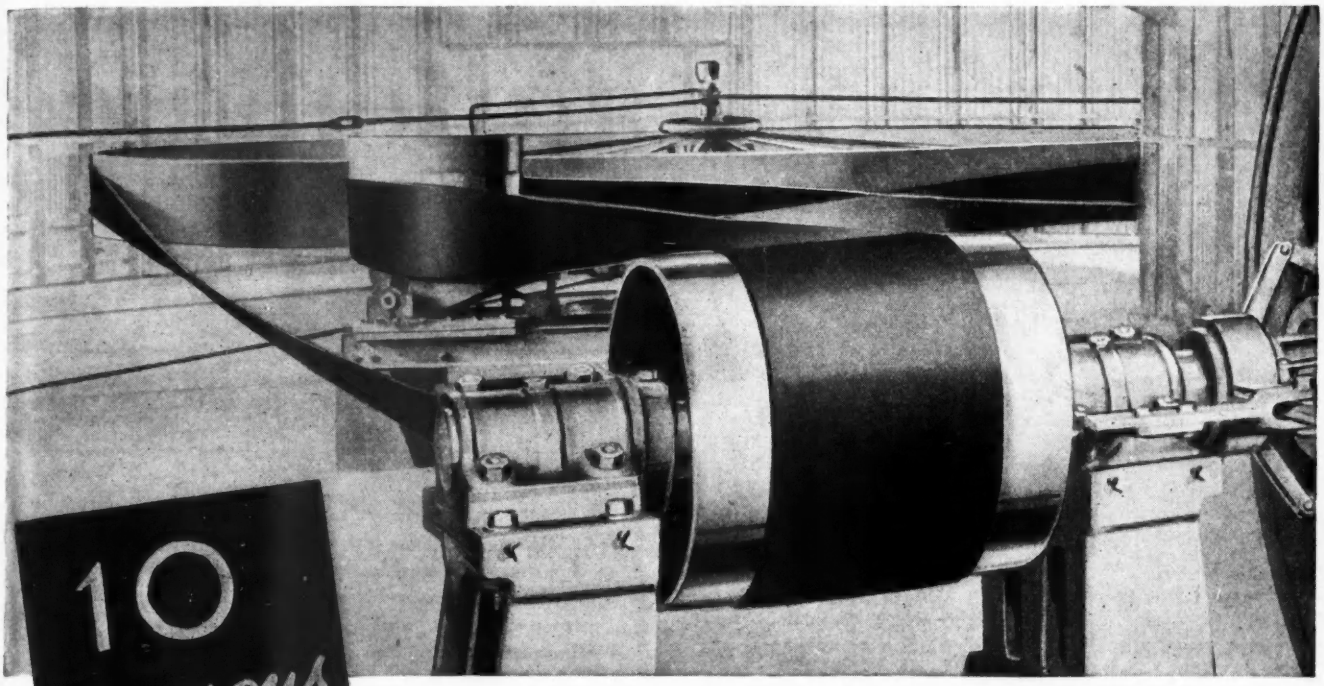
A 125-horsepower Waukesha gasoline engine is being used for drilling the well, while a 100-horsepower engine of the same type is used for a standby. The smaller engine may be used in case of emergency for circulating or for coming out of the hole. A third gasoline engine is used for driving two 6¾ by 14 Gardner-Denver mud pumps.

All of the large gasoline engines have vacuum feed, the gasoline supply being located in tanks under the opposite end of the derrick floor. A 10-horsepower Fairbanks-Morse engine is being used to pump water, and to pump away mud, while the Link Belt vibrating screen is operated with a six-horsepower gasoline engine. Most of the drilling equipment is of the conventional type.

Two 750-barrel tanks have been built on the corner of the platform, one being used for water and one for mud.

Supplies and equipment for both the island and for drilling were transported to the location by derrick barge and a gasoline launch. The lighter launch is being used exclusively for transporting the men to and from work and for moving current supplies. General Petroleum Corporation's pier is used as an operating base.

The steel island is completely isolated, having no connection by power line or pipe line. Two gasoline units furnish power for lighting and minor needs.



10 Reasons Why!

SUPER EXCELO
OIL COUNTRY BELTING
Gives Best All-Around Service

- Flexibility
- High tensile strength for overloads
- Hugs all pulleys
- Minimum stretch
- Unusual endurance at clamps
- Draws evenly for clamp adjustment
- Best quality closely woven silver duck
- Highest grade rubber friction compound
- Skim between all plies
- Perfect ply adhesion

Branded with the A.P.I. Symbol and Made to Specifications that Exceed A. P. I. Requirements.

Folded or Square Edge. Endless if Specified.

Mid-Continent Distributors

FRICK-REID SUPPLY CORPORATION, TULSA, OKLA.
THE BOVAIRD SUPPLY COMPANY, TULSA, OKLA.

THE REPUBLIC RUBBER CO. YOUNGSTOWN, OHIO

Manufacturers of Rotary and all other types of Hose, Transmission Belting, Packing, Gaskets, Rings, etc. for Oil Country Service

Pressure Maintenance *In* East Texas

JOHN A. RITTER
Sun Oil Company, Dallas, Texas

ABSTRACT

THE East Texas oil field has awakened public interest in, and has advanced the general understanding of, reservoir pressure. The author uses pressure maps and production charts to show changes in East Texas reservoir pressure during 1931-1932.

Occurrences causing loss in reservoir pressure and instances showing the effect of ratable production are given followed by mention of the water drive as a source of the reservoir energy possessed by the dissolved gas in the oil.

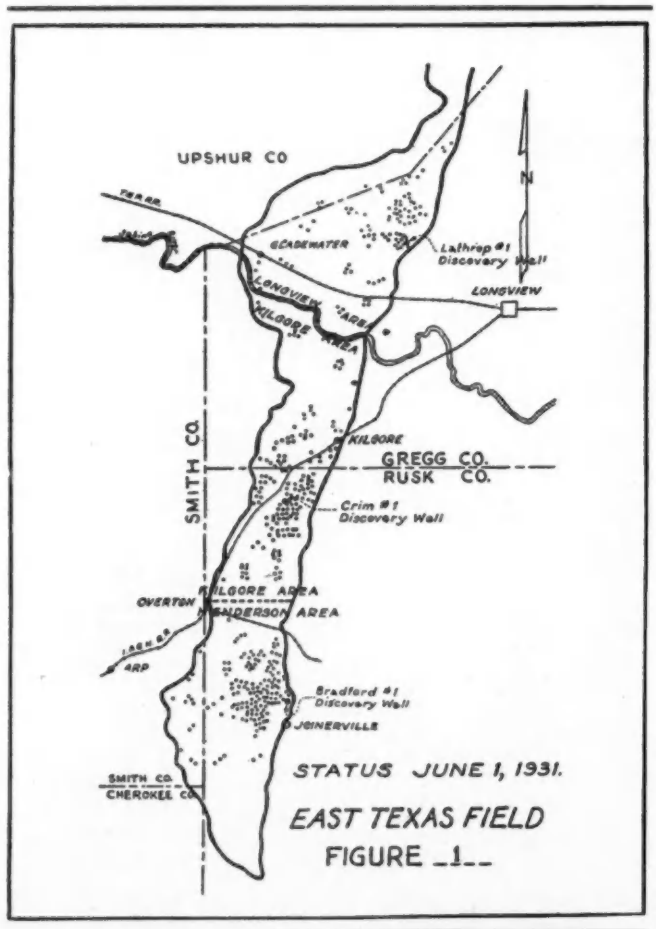
East Texas is one of few flush fields presenting a slow water drive and its effects are mentioned together with different reservoir pressure characteristics of wells due to sand conditions as developed by reservoir pressure measurements. Attention is called to the difference in the capacity of leases to produce and to the conditions set up by close well spacing.

After acknowledging that the present system of ratable production is an improvement over that which existed prior to military shut-down, the paper concludes with a plea for a revision in the method of ratable production to permit a more equitable division of recoverable oil.

This paper was presented at Thirteenth Annual Meeting, American Petroleum Institute, Houston, Texas, November 15, 16 and 17, 1932.

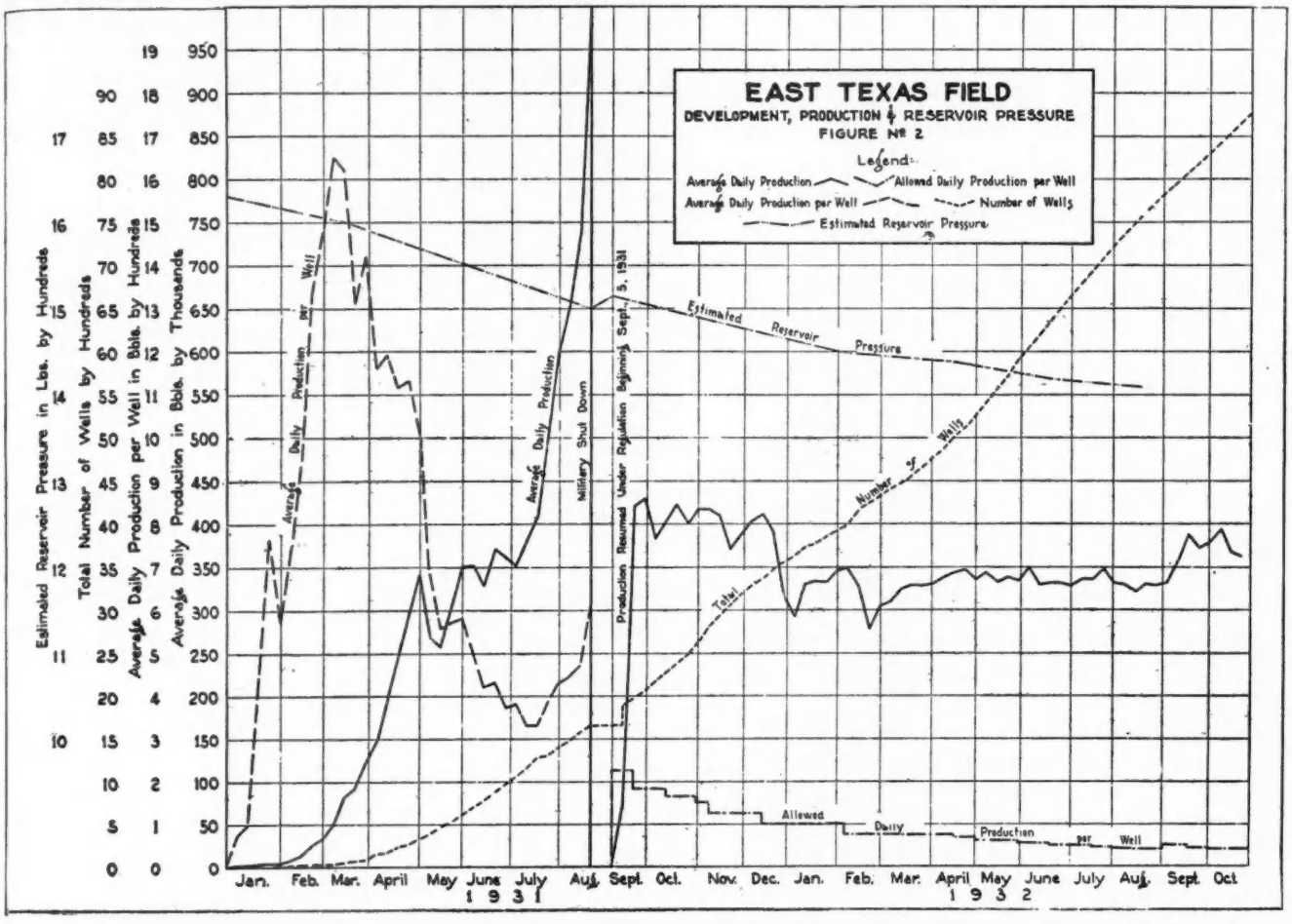
DEVELOPMENT and operation of oil properties has been receiving much engineering study during recent years. Many theories have been advanced which have required practical demonstration on a large scale before they could receive the consideration which they might merit or receive any general acceptance. The development in East Texas is occurring during a period when general economic conditions are unsettled, when much criticism is being directed toward our political and legal machinery, and when nearly every industry is confronted by difficult problems of production, manufacture, management and distribution.

The attention and interest of the entire oil industry has been focused on the East Texas oil field. It has a prolific sand, is of great magnitude and is geographically located near deep water. It is one of the largest pools in history and because its ownership is divided among all classes of operators, it presents in one area practically every economic problem which confronts the oil producer, and is giving those interested in various branches of the oil industry an opportunity to observe regulated and unregulated operation in a single field. It has afforded a most remarkable opportunity for study because it is to a large degree interconnected over its entire area. By virtue of its enormous capacity it has been able to withstand early abuses caused by too rapid and concentrated withdrawals of a magnitude which would have greatly harmed, if not exhausted, a field of smaller size. These circumstances have permitted or have caused to be permitted, practices which may prove to be revolutionary in the oil industry.



Pressure Changes

A few years ago the terms "Reservoir Pressure" and "Reservoir Energy" were infrequently heard and little understood; they received scant consideration in the practical operation of most properties. It has been found that surface-pressure observations do not reflect accurately the actual reservoir conditions, therefore sub-surface pressure


EAST TEXAS FIELD
DEVELOPMENT, PRODUCTION & RESERVOIR PRESSURE
FIGURE Nº 2
Legend:
Average Daily Production
Allowed Daily Production per Well
Average Daily Production per Well
Number of Wells
Estimated Reservoir Pressure
Estimated Reservoir Pressure in Lbs. by Hundreds
Total Number of Wells by Hundreds
Average Daily Production per Well in Bbls. by Hundreds
Average Daily Production in Bbls. by Thousands
Average Daily Production per Well
Average Daily Production
Military Shut Down
Production Resumed Under Regulation Beginning Sept. 5, 1931
Estimated Reservoir Pressure
Number of Wells
Total
Allowed Daily Production per Well
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. April May June July Aug. Sept. Oct.
1931
1932

measurements are now depended upon almost entirely when studying the characteristics of wells.

Shortly before discovery of the East Texas pool reliable instruments had been developed for accurately measuring and recording reservoir pressures, so from its inception this field has been under close observation. Many events have been recorded showing the effect upon the reservoir pressure caused by different drilling densities, unequal withdrawals, and other operating practices.

The accumulated data have been widely distributed and discussed. It is hoped that such investigations and discussions will eventually result in a realization that correctly interpreted facts of this nature will be of material assistance in establishing a more equitable division among lease owners of the recoverable oil and gas which underlie their respective properties, and will aid in assigning to each a proper share in the use of the reservoir energy. Such a realization on the part of operators, large and small, land and royalty owners, as well as a large body of the interested and affected public, would do much to hasten the adoption of producing methods which appear to be necessary and desirable for a proper and reasonable conduct of oil operations.

Bradford 1, the discovery well in the Henderson (Joiner) area, was drilled in November, 1930. It is now estimated that at that time the reservoir pressure over the entire East Texas field was estimated at 1630 pounds per square inch (corrected to a level of 3300 feet sub-sea). In February, 1931, Crimm 1 gave the Kilgore area its first production gave the Kilgore area its first production and at about the and at about the same time Lathrop 1 was completed in the Longview area. By June 3, 1931, 703 wells had been drilled in the three areas. (See Table 1).

TABLE 1
Status East Texas June 3, 1931

Area	Completed Wells	Daily Total	Production Per Well	Total Prod. to June 3 1931
Henderson	281	119,188	475	
Kilgore	311	165,576	533	
Longview	111	66,712	600	
Total	703	351,476	502	20,000,000*

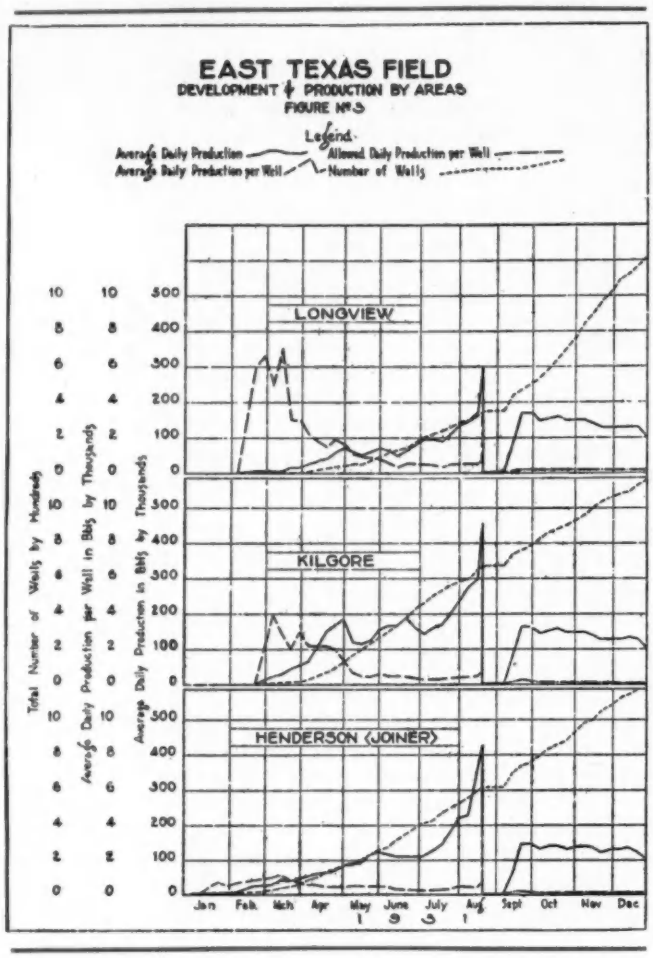
*Approx.

Most of the wells completed prior to June, 1931, were located in the areas adjacent to the three discovery wells. This condition is illustrated in Figure 1. Many of these wells were being produced at such high rates that low pressure areas soon developed near each discovery well, causing some wells to quit flowing.

Figure 2 shows graphically the progress of the development and the reservoir pressure changes which have occurred in East Texas. This chart illustrates the effects of unregulated operation which, prior to the military shutdown August 17, 1931, permitted a total withdrawal of 60,241,000 barrels of oil from 1644 completed wells and caused the reservoir pressure to drop rapidly from the original pressure of 1630 pounds to appoximately 1500 pounds.

No oil was produced during the 19-day military shutdown, and when it ended on September 5, 1931, the evidence then available indicated that the reservoir pressure had increased slightly, as shown in Figure 2.

The reservoir pressure declined less rapidly after regulation became effective. During the year September 5, 1931, to September 5, 1932, the reservoir pressure dropped about



100 pounds; during this period the total number of wells in the field had increased to 7800 and approximately 130,000,000 barrels of oil had been produced.

Figure 3 illustrates the progress of the East Texas development in the Henderson, Kilgore and Longview areas. From June 3, 1931, until August 17, 1931, 941 wells had been drilled making at the latter date a total of 1644 producing wells for the entire field. (See Table 2.)

TABLE 2
Status East Texas August 17, 1931

Area	Completed Wells	Av. Daily Production	Total Prod. to Aug. 17, 1931
Henderson	622	305,647[1] 420,000[2]	
Kilgore	668	326,281[1] 456,000[2]	
Longview	354	216,470[1] 304,000[2]	
Total	1644	848,398[1] 1,180,000[2]	60,000,000 (approx.)

[1] Five days production averaged for seven days.
[2] Actual daily average.

If a reservoir pressure map were available showing the conditions existing on August 17, 1931, just prior to the military shut-down, it would no doubt show severely contorted low-pressure areas near each of the discovery wells. A reservoir pressure map for September 5, 1931, should show similar low pressure areas of less magnitude because all wells had been shut down for a 19-day period.

The reservoir pressure map, Figure 4 shows the low-pressure areas existing on November 1, 1931, near each discovery well. The contours shown on this map indicate the condition after six months of reservoir pressure distortion due to unregulated production followed by two months of pressure balancing caused by a regulated program during September, 1931, and October, 1931.

Prior to November, 1931, the Longview area had lagged behind the Kilgore and Henderson areas in number of completed wells and quantity of oil produced daily. (See Table 3.) It is for this reason that relatively high pressures are noticeable in this area as compared to the Kilgore and Henderson areas.

TABLE 3
Status East Texas October 27, 1931

Area	Completed Wells	Av. Daily Production	Total Prod. to October 27, 1931
Henderson	934	143,700	
Kilgore	944	151,800	
Longview	764	122,200	
Total	2642	417,700	84,000,000 (approx.)

The pressure conditions on February 1, 1932, are shown in Figure 5. Uniform withdrawals resulted in a contraction of the low pressure areas near Kilgore and in the southern part of the field. On February 1, 1932, the Longview district lead in total wells completed and in daily production (see Table 4), thereby causing a reduction in the 1500-pound area in that portion of the field. (Figure 5.)

TABLE 4
Status East Texas February 2, 1932

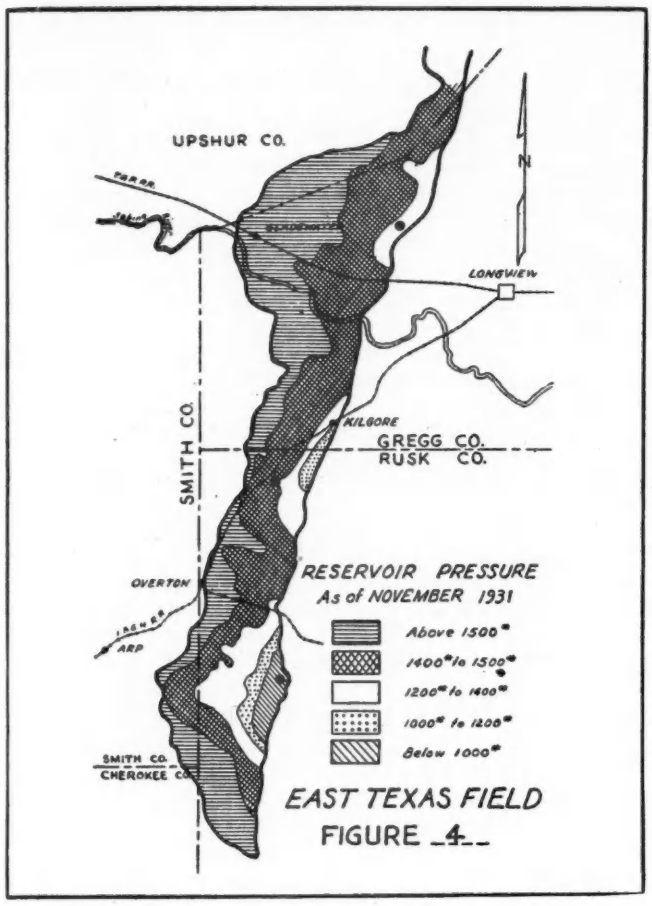
	Henderson, Kilgore, Longview November 24, 1931			Total
Number of Wells	1,082	1,059	1,026	3,167
Total Daily Production	131,600	131,050	125,300	387,950
Production to Date....				92,400,000
	February 2, 1932			
Number of Wells	1,328	1,263	1,412	4,003
Total Daily Production	116,800	110,150	118,400	345,350
Production to Date....				116,000,000

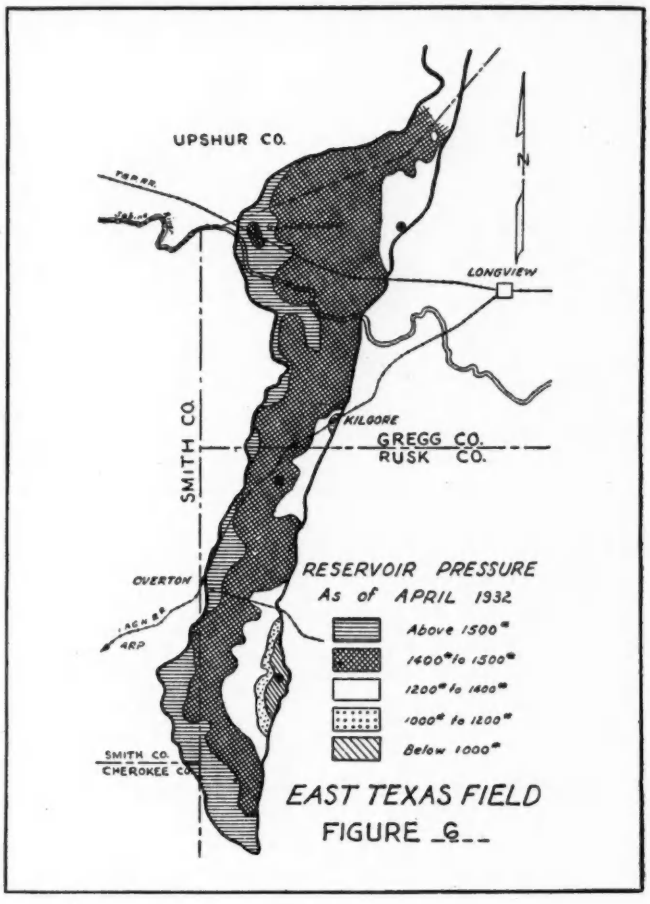
By April 12, 1932, 4885 wells had been completed in the East Texas field (see Table 5), thereby permitting a more uniform withdrawal from the several areas (see Figure 6). Figure 2 shows graphically the beneficial effect on reservoir pressures caused by pronounced reductions in the daily allowable during this period. Figure 6 shows an isolated and abnormal low-pressure area near Gladewater which is explained by newspaper accusations that unusually heavy withdrawals had occurred secretly in that area.

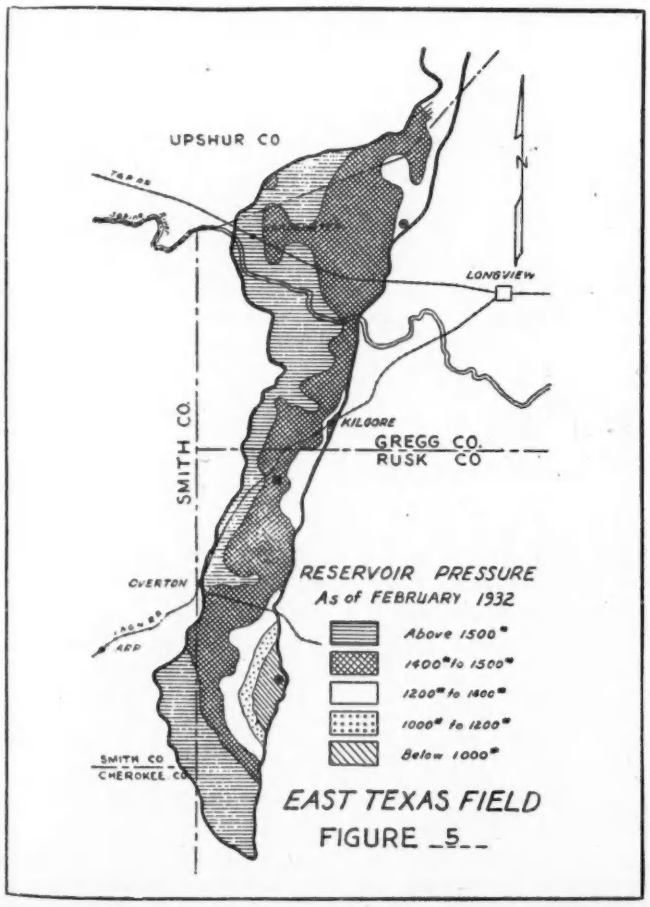
TABLE 5
Status East Texas April 12, 1932

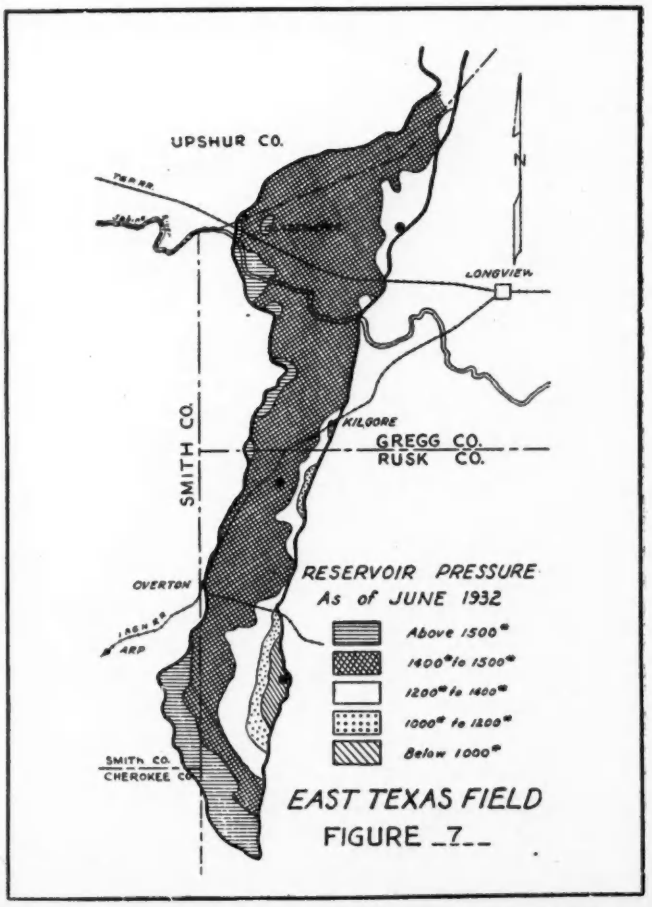
	Henderson, Kilgore, Longview February 2, 1932			Total
Number of Wells.....	1,328	1,263	1,412	4,003
Total Daily Production	116,800	110,150	118,400	345,350
Production to Date....				116,000,000
	April 12, 1932			
Number of Wells.....	1,565	1,521	1,799	4,885
Total Daily Production	109,521	107,354	126,610	343,485
Production to Date....				141,000,000

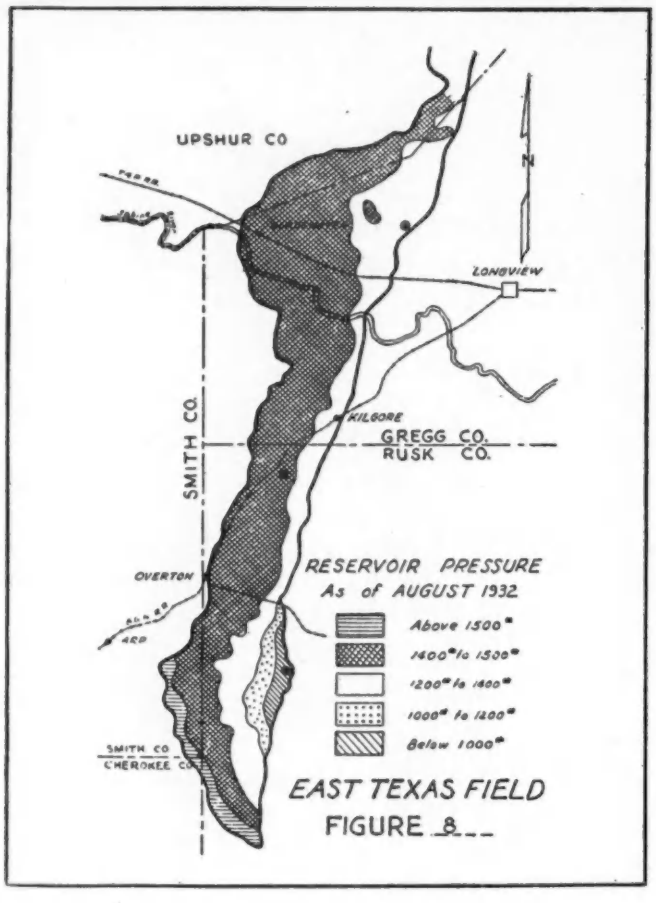
An increase in the number of completions during May apparently more than counterbalanced the reduced allow-

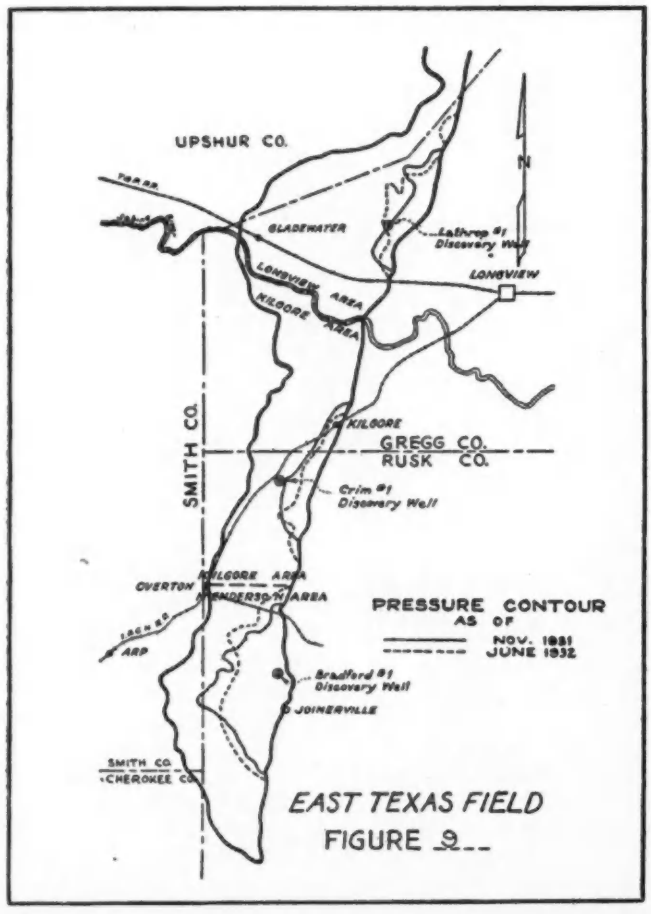

UPSHUR CO.
N
LONGVIEW
KILGORE
GREGG CO.
RUSK CO.
SMITH CO.
OVERTON
SMITH CO.
CHEROKEE CO.
RESERVOIR PRESSURE
As of NOVEMBER 1931
Above 1500#
1400# to 1500#
1200# to 1400#
1000# to 1200#
Below 1000#
EAST TEXAS FIELD
FIGURE 4


UPSHUR CO.
N
LONGVIEW
KILGORE
GREGG CO.
RUSK CO.
SMITH CO.
OVERTON
SMITH CO.
CHEROKEE CO.
RESERVOIR PRESSURE
As of APRIL 1932
Above 1500#
1400# to 1500#
1200# to 1400#
1000# to 1200#
Below 1000#
EAST TEXAS FIELD
FIGURE 6


UPSHUR CO
N
LONGVIEW
KILGORE
GREGG CO.
RUSK CO
SMITH CO.
OVERTON
SMITH CO
CHEROKEE CO
RESERVOIR PRESSURE
As of FEBRUARY 1932
Above 1500#
1400# to 1500#
1200# to 1400#
1000# to 1200#
Below 1000#
EAST TEXAS FIELD
FIGURE 5


UPSHUR CO.
N
LONGVIEW
KILGORE
GREGG CO.
RUSK CO.
SMITH CO.
OVERTON
SMITH CO.
CHEROKEE CO.
RESERVOIR PRESSURE
As of JUNE 1932
Above 1500#
1400# to 1500#
1200# to 1400#
1000# to 1200#
Below 1000#
EAST TEXAS FIELD
FIGURE 7





able during the period from April to June, 1932. (Note Figure 2 and Table 6.) Figure 7 shows a reduction in the size of the 1500-pound zone on the west side of the field and a decided increase in the size of the 1400-pound zone.

TABLE 6

Status East Texas June 21, 1932

	Henderson, April 12, 1932	Kilgore,	Longview	Total
Number of Wells.....	1,565	1,521	1,799	4,885
Total Daily Production	109,521	107,354	126,610	343,485
Production to Date....				141,000,000
	June 21, 1932			
Number of Wells.....	2,021	1,964	2,394	6,379
Total Daily Production	104,069	102,661	125,066	331,823
Production to Date....				163,743,185

Figure 8 shows that by August 17, 1932, most of the contour lines had straightened noticeably. At that time changes were not so rapid and were of less magnitude because 7500 wells had been completed and current withdrawals were uniformly distributed. The total production of the entire field, as of August 17, 1932, amounted to 184,000,000 barrels.

Figure 9 shows the change in position of the 1400-pound pressure contour during the interval between November, 1931, and June, 1932.

The withdrawal of 84,000,000 barrels of oil from 2642 completed wells set up the condition outlined by the solid line curve for November 1, 1931.

The withdrawal of an additional 80,000,000 barrels of oil from 6379 completed wells during the following six months ending June 20, 1932, caused this same 1400-pound contour line to shift as shown by dotted line. This illustrates the manner in which uniform withdrawals acted to correct the distorted contours caused by unregulated production practices.

It would seem that the reservoir pressure data with which such maps as these are prepared is evidence that a system of regulated production is a step very much in advance of the system practiced prior to the military shut-down.

Numerous experiences in East Texas have demonstrated that a large withdrawal of oil from any one well is accompanied by a drop in reservoir pressure, as well as a drop in the productive capacity of wells in the vicinity and that the pressure is gradually built up when the heavy withdrawal ceases. It was found that while a well in the Kilgore area was on fire, other wells near it were adversely affected. During a five-day period, July 1, 1931, to July 6, 1931, one well registered a drop in closed-in surface casing pressure of 30 pounds although surface tubing pressure remained steady. From July 6 to July 15 the same well was allowed to flow through open tubing and a reduction in daily production was noticed from 10,840 barrels to 9125 barrels. This was accompanied by a further reduction in surface casing pressure of 30 pounds. The sand in this area is very prolific and highly permeable and reservoir pressure at this well was soon restored when the fire was mastered.

An area southeast of Gladewater presents as another example a well which flowed out of control for a period of approximately 18 days, and when placed under control not long thereafter, was found to have the same sub-surface pressure, namely 1598 pounds, as a well some 3000 feet away which had just been completed.

Prior to the military shut-down on August 17, 1931, reservoir pressure measurements on a lease located centrally east and west but in the southern part of the field, developed

the fact that this lease had a much lower reservoir pressure than might have been expected since its production had always been restricted in accordance with existing field regulations. Investigations, at that time, disclosed the fact that several operators in this vicinity were producing large quantities of oil from their individual wells regardless of existing restrictions. The drop in reservoir pressure noticed on this lease indicated that much of the oil produced by neighboring operators, and much of the reservoir energy used in producing their oil, must have been supplied by that part of the reservoir underlying the lease where the pressure was unaccountably low. Subsequent pressure measurements prove this to be correct because since August 18, 1931, a gradual increase in pressure has been observed on this lease. A well completed April 15, 1931, had the record shown in Table 7.

TABLE 7
Pressure Record of an East Texas Well

Date	Reservoir Pressure	Date	Reservoir Pressure
8-18-31	1034	4-20-32	1261
8-29-31	1170	5-25-32	1279
9-24-31	1159	6-16-32	1275
11-11-31	1199	7-21-32	1283
2- 4-32	1233	8-19-32	1283
		9-20-32	1291

Approximately 85 wells which were not flowing in August, 1931, prior to the military shut-down, were flowing their allowable production in June, 1932.

Oil Migration

The industry first became interested in the solubility of gas in oil about five years ago and the results obtained from ensuing investigation have changed materially our conceptions regarding the function of gas in oil and its effect on the physical properties and movement of oil in the reservoir. Experiments with East Texas crude oil are now being made in an effort to determine accurately various properties of the crude oil and gas as it exists in the East Texas reservoir. Experiments already made using East Texas crude oil and East Texas natural gas, as well as pressure data obtained at wells by the use of recording instruments, indicate that all of the natural formation gas originally present in the East Texas reservoir proper was dissolved in the oil and that the gas continues to remain in solution at any reservoir pressure above approximately 900 pounds. It has been noticed many times that the density of the columns of fluid in wells flowing through tubing changes at a point in the tubing at which the gauge pressure is approximately 700 pounds. This happens in many cases at a depth of approximately 2500 feet and we infer it is the point at which free gas is being liberated.

A relatively high pressure now exists on the gas in most of the reservoir so that the gas still remains in solution in the oil except in isolated areas near the eastern edge of the field where low reservoir pressures are observed.

If present reservoir pressure conditions prevent the accumulation of any free gas in the reservoir it follows that the withdrawal of oil is causing a movement of fluid to take place in the reservoir in a manner and at a rate which keeps all of the pore spaces in the sand filled with fluid.

It is thought that the causes of this movement are twofold. Due to the pressure differential set up by the withdrawal of fluid, there is the actual movement of fluid through the sands in a general direction from west to east aided by an additional movement of fluid caused by its own expansion or contraction. This latter expansion or contraction in the fluid occurs whenever the pressure on the fluid in the reservoir is lowered or increased due to varying rates of withdrawal.

Water Drive

The reservoir pressure in the East Texas sand resulted from the water pressure to which the reservoir is subjected along the west side.

Under properly regulated oil withdrawals the water pressure exerted along the west side of the reservoir will supply "reservoir energy" to the gas within the reservoir, which energy in turn can be used to assist the hydraulic water pressure to raise the oil to the surface of wells by natural flow.

Table 8 lists their reservoir pressure of several wells as observed soon after completion, also their reservoir pressure observed quite recently.

Water was first encountered along the western edge of the field in March, 1931, at 3317 feet below sea level.

Since that time approximately 140 wells either have been drilled deep enough to encounter water or have been operated in such a manner that water has been produced with the oil regularly, or at least made its presence known.

The original water table was estimated by various authorities to be 3320 feet sub-sea. This was the approximate average depth at which water was encountered in the early stages of the development. Estimates at the present time place the average water table at 3311 feet sub-sea.

East Texas is but one of many oil fields in which a water drive has followed the production of oil. It is one of a very few, however, where a relatively slow water drive, accom-

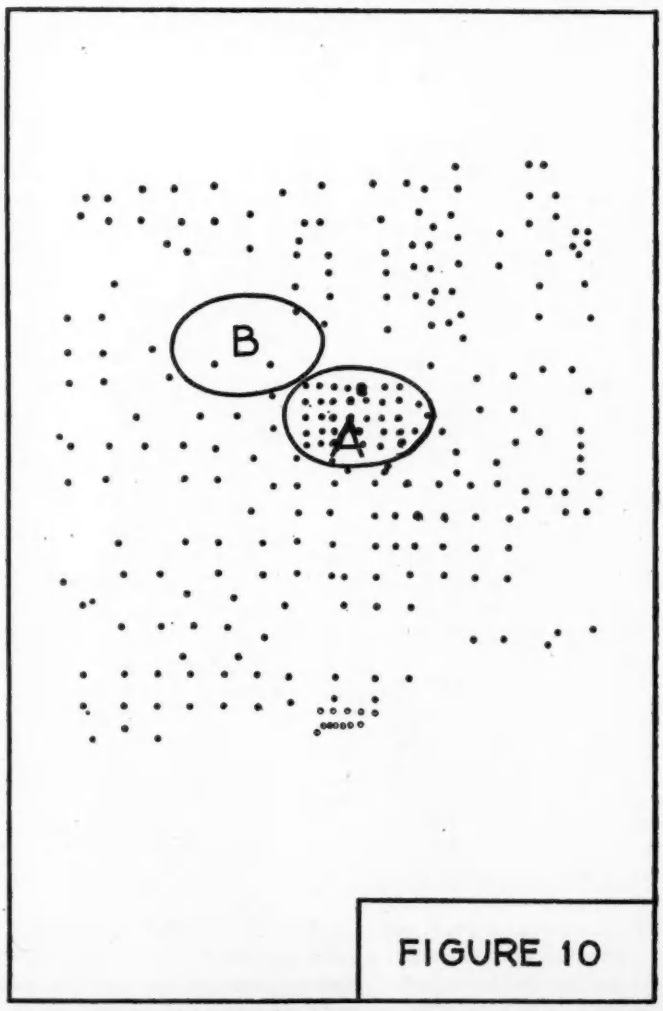


FIGURE 10

TABLE 8
Comparison of Well Pressures After a Year's Operation

Well	Location	Date	Static Res. Press.	Date	Static Res. Press.
			WESTERN ZONE		
A	North	10-29-31	1521	9-24-32	1467
B	Central	8-13-31	1453	8- 9-32	1425
C	South	8-18-31	1522	9-20-32	1521
			CENTRAL ZONE		
D	North	6-21-31	1445	9-23-32	1367
E	Central	4-21-32	1480	9-22-32	1434
F	South	8-18-31	1034	9-20-32	1291
			EASTERN ZONE		
G	North	1-18-32	1465	9-23-32	1363
H	Central	10-10-31	1418	9-22-32	1384
I	South	1- 8-32	921	9-27-32	917

panied by a regulated production program, has been in operation over a large area for a sufficiently long interval to permit all classes of operators to observe and study its practical effect.

Previous Woodbine sand areas developed in Texas were produced under conditions which exhausted the reservoir pressure rapidly as compared to East Texas. Due to pressure conservation certain wells in East Texas now have characteristics which are quite different from comparably located wells in fields where the reservoir pressure was rapidly exhausted. For example, the maintenance of high reservoir pressure undoubtedly accounts for the fact that some East Texas wells are flowing 16 months after the first appearance of water. Some have continued to flow while producing as much as 60 per cent water. One such well, when put on the pump, required as little as five horsepower to pump the allowable oil each day although producing as much as 80 per cent water.

Experience in other areas has proved that a slow water drive properly controlled does permit of more efficient use of reservoir energy in the production of oil and secures for the operator a greater recovery per acre. The East Texas reservoir presents at this time a flush field where a comparatively slow water drive is functioning under reasonably effective control. Slow and properly regulated fluid withdrawal has also permitted pressures to be conserved in all types of wells and has discouraged wasteful use of reservoir energy by one operator at the expense of his neighbor.

Well Potential

Inspection of cores has shown that the thickness of the oil-bearing sand underlying the East Texas oil field varies materially, also decided differences are apparent in the texture of the sand comprising the reservoir.

Reservoir pressure measurements have conclusively demonstrated that wells which penetrate large bodies of highly permeable sand are capable of maintaining a high reservoir pressure when flowing. For instance, a certain well has a closed in static reservoir pressure of 1510 pounds and reservoir pressure of 1498 pounds when flowing 3000 barrels per day. This is only 12 pounds pressure drop for a 3000-barrel rate of flow.

Conversely it has been demonstrated frequently that wells which penetrate thin bodies of sand having low permeability are not capable of maintaining a high pressure when flowing. Witness a well which has 1494 pounds static reservoir pressure, but when producing at a rate of 1000 barrels daily, can maintain a pressure of only 1022 pounds. This is 472 pounds pressure drop for a 1000-barrel rate of flow. A more extreme example is a well showing a static pressure of 1365 pounds and a flowing pressure of only 942 pounds when producing 168 barrels per day. This is a 432 pounds drop for a 168-barrel rate of flow.

That wells or leases possess different potential and ultimate capacity is generally recognized and is evidenced by the fact that properties in sectors having thick sands of high permeability in which rapid repressuring occurs, are more in demand than leases which are located in sectors where it is known that the sands are of low permeability in which large pressure declines are followed by slow pressure restoration. Owners know from experience that properties which have prolific sands are capable of yielding larger recoveries per acre than can be had from less permeable areas. Reservoir pressure measurements assist in identifying such areas.

Well Spacing

The fact that heavy withdrawals adversely affect adjacent areas has been established in East Texas. Figure 10 shows the pattern of well spacing in one East Texas area. Such concentrated and irregular spacing of wells sets up a drainage condition similar, except in degree of intensity, to conditions which have been cited previously. Operating the area shown in Figure 10 under a system of "equal well allowables," permits unequal withdrawals as between comparable areas "A" and "B." It is hardly just to permit wasteful use of reservoir energy and give a recovery of 57,350 barrels of oil per month to densely drilled area "A" while area "B" of equal size and similar capacity is allowed to produce only 4675 barrels. During the time involved in the drainage of the pool, area "B" must provide some of the energy necessary to maintain reservoir pressure under the densely drilled area "A." The inequity is obvious.

Conclusion

The present system unquestionably offered a means to improve what every one recognized to be a serious situation. However, in its practical application, it tends to place on a basis of equality highly prolific areas and relatively unproductive areas. It does not encourage an effective and desirable spacing of wells for the purpose of insuring proper control of reservoir pressure.

Ratable production certainly promotes pressure maintenance for the benefit of an entire pool and much progress in this direction has been made in East Texas.

By combining their knowledge of sand conditions in a well with ideas gained from observation of reservoir pressure changes in the same well when it produces at different rates and adding to this information a further study and observation of gas-oil ratios and flowing columns, engineers in East Texas have already accumulated many valuable facts. They are constantly adding the general knowledge and understanding of the practical working conditions necessary for a proper and efficient use of reservoir energy. They are contributing a large amount of information, the consideration of which has already caused a reversal of attitude on the part of many who at the time the East Texas field was discovered were opposed to suggested changes in oil field practice which in any way interfered with or regulated the manner in which they might wish to conduct their operations.

It is reasonable to assume that as more knowledge and experience are acquired an improved system may be developed and adopted which can better serve a pool having divided ownership. Such an improved system, while conserving the natural reservoir pressure, should take into account the varying size of individual tracts and should recognize their differences in capacity to produce because of sand conditions and structural position.

Some data for the pressure curve Figure 2 was obtained from article, "Applying Subsurface Pressure Determinations to the Problems of Oil Well Production," by D. G. Hawthorne, Ponca City A.I.M.E. meeting, September, 1932.

Air Operated Steam Engines *Solved This* Pumping Problem

STEAM engines utilized for operating pumping powers where no boilers are installed is quite unusual. In Northern Oklahoma, near Nowata, Delaware Consolidated Oil Company has been operating individual lease powers for several years with steam engines, just the ordinary 12 by 12 drilling engine known so well to the old cable tool driller, and without a boiler set within miles of the properties.

This type of lifting power has been operated almost since repressuring was started on these properties a number of years ago, which were formely owned by several of the major companies. In the latter years of operation previously to being pooled to permit repressuring, the wells were pumped by the conventional gas engines set in the usual way in the building, with 37 individual units installed on the various leases.

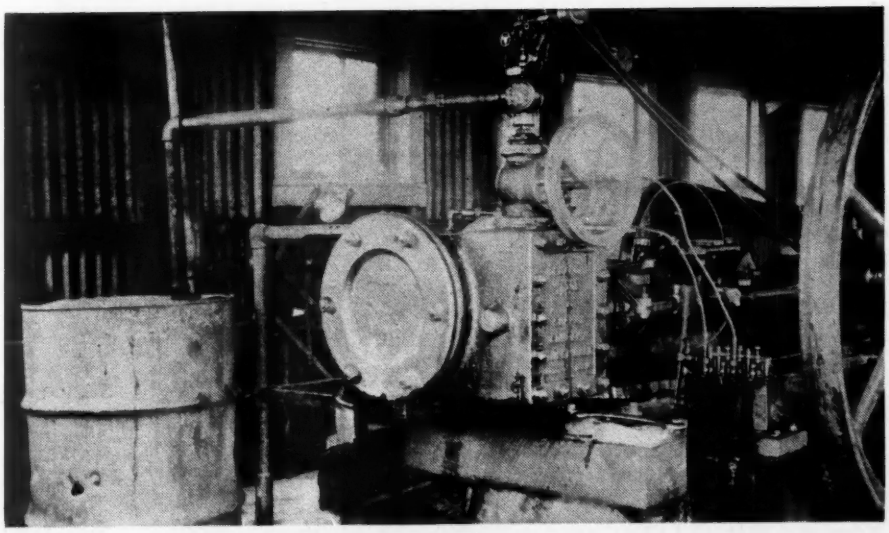
Air to supplement the small amount of gas produced with the oil was necessary to create and maintain an artificial reservoir pressure. An insufficient amount of fuel was available with which to operate the 1400 horsepower compressor room and the 37 pumping engines, so the thought came to the management of the repressured properties that steam engines operated with compressed air could be used to a good advantage. Setting boilers to generate steam with which to operate the engines was out of the question, for a greater number of men and a large amount of fuel would be required. The gas engines were sold for what they would bring and an equal number of steam drilling engines were purchased for a nominal sum, in fact the proceeds from the sale of gas engines just about paid for the steam engines and the labor used in removing and setting the steam engines in place.

When the repressuring program had begun, high pressure gas and lines were laid over the properties carrying gas and air alternately with which to build up the reservoir pressure to a point where the oil could be recovered. From these mains which carried air only, laterals and feeder lines were laid to the power houses with air at 200 pounds pressure.

As the steam engines had been set on the same foundations from which the old gas engines had been removed, the lines were connected, after entering the engine room, to a coil set near the cylinder end of the engines. The turns were small enough that a 55-gallon oil barrel could be placed around it, and a gas line connected to a burner to warm the air before being admitted to the steam chests. No regulators were used, as all the gasometers, reducers and other paraphernalia were removed when the gas engines were sold. The original throttle with the telegraph wheel was left on the engines as were the governors, belt driven as when steam was used to operate them.

In this particular installation, as well as others under the same conditions and circumstances, air is a very satisfactory method of operating steam engines. Shortage of gas made it imperative, and by the use of compressed air driven steam engines, "tromping over" of the gas engine is avoided, especially in cold weather. When the pumper must operate the power, he simply fires up the heater, opens the throttle the required number of turns to maintain the desired pumping speed and goes about the other business on the lease. No frozen lines to think of, broken heads and bursted jackets cannot occur. Refrigeration from the expansion of air from 200 pounds to the exhaust pressure is avoided through the preheating of it before it enters the steam chest.

These engines have been installed and operated on compressed air for about four years, and the upkeep has been negligible. Oiling is provided for by utilizing mechanical force feed units operated from the motion of the valve rod. Clutch troubles are eliminated, because there are none required, the same as if the engines were operated by steam for which they were originally manufactured.



This drilling engine has operated on compressed air, pumping an individual well, more than four years with a minimum of repair expense. The compressed air is heated in the old oil barrel at the left to prevent freezing whn the air is released in exhaust.

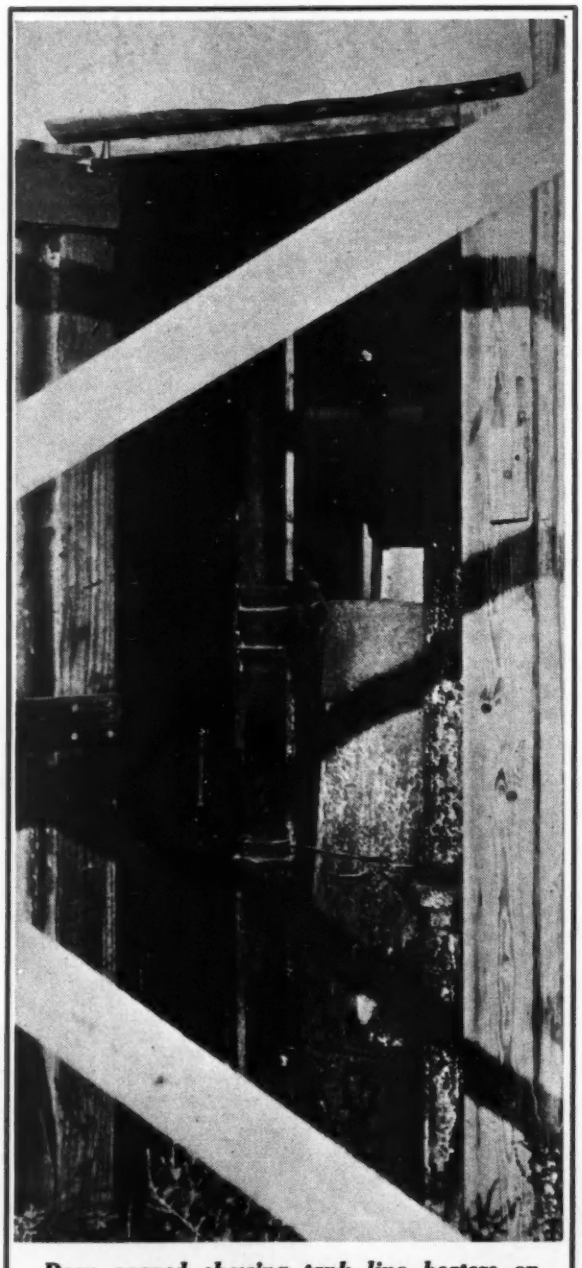
Simple Gas Heater

Keeps Water Tank

Pipe from Freezing

PREVENTING the supply and feed lines on elevated tanks supplying lease camps, from freezing has been more or less of a problem in the Mid-Continent fields during winter, especially when the tanks are set on high supports. The usual method is to box in the lines with boards and fill the conduit surrounding the lines with manure, depending upon the insulating effect of the bulk of the filling and the heat from decomposition to prevent frost penetrating to the lines leading from the bottom of the tank to the ground. Invariably in a short time after the frost box has been filled to the top, the settling of the manure will leave a gap near the top of the box and near the bottom of the tank, exposing a portion of the lines to the elements. If the flow from the tanks is intermittent, as during the early morning when very little water is used, the lines are likely to freeze, and in effect, the entire length might as well be left exposed. It's easier to repair a line in the open than it is to tear out a box and remove the filling.

Another and better way, employed by some companies, is to build a steel or wooden frame from the ground to the bottom of the elevated tank, large enough that a long vertical room is provided when the framework has been sheathed with corrugated or flat steel. The size of the shaft can be varied to suit local conditions, leaving sufficient space that work may be accomplished on the supply lines and fittings without stripping the sheathing.



Door opened showing tank line heaters on Skelly Oil Company's Osage County Lease.

A gas line may be led from any point that is convenient to the tank line box and connected to a burner set on the ground. Over the burner, which may be one from an old cook stove with the mixer attached, a short piece of pipe eight or ten inches in diameter may be placed with an opening cut from the lower end through which the burner may be inserted. Or a more elaborate connection may be made, depending upon the material at hand and the size of the tank. A simple heater was constructed by one of Skelly Oil Company's field men in Osage County with the burner placed between the supply and overflow lines beneath the tank. A simple jet burner was placed under a short nipple cut from the end of an eight-inch joint of pipe, long enough that the flame would not impigne upon either of the lines, but providing circulation of air by draft from the pipe upward.

The cost of installation is negligible, not any more than building and filling an ordinary frost box. Certainly not as expensive as repairing a pipe line when the weather is sub-zero. This kind of a heater does not require filling each year, is clean and permanent. No moisture is collected to corrode pipe lines and tank bottoms.

MARKETS ~ STATISTICS

Increase of 30,000 barrels at Oklahoma City and 9,000 barrels in California principal factors in sending production to highest level attained in weeks. Texas above allowable.

Oklahoma Leads Way in Big Production Increase

LARGE increases of crude production in Oklahoma, Texas, and California combined during the week ending December 10 to send the United States output to a level 54,095 barrels higher than the previous week, the new average being 2,147,015 barrels daily, and a great deal above the rate dictated by current petroleum consumption.

Whereas there should have been a further decline in production for the past week, in deference to economic considerations, there was a sharp reversal of the gradual decline which had been in progress the previous two weeks, and crude oil output jumped back up to a level higher than it had been for about six weeks, going back to mid-October proportions.

Oklahoma figured most prominently in the production increase of the past week, jumping upward by the large figure of almost 30,000 barrels, to 396,220 barrels daily, the highest level for a considerable number of weeks. Practically all of the rise was caused by Oklahoma City field. Its output was higher than it had been for a long time.

California output rose 9000 barrels, to 475,000 barrels daily, with various fields contributing to the change, including Long Beach and Midway-Sunset.

Whereas Texas production was above the allowable of about 850,000 barrels daily fixed in the railroad commission's order placed in effect December 1, it was but natural to expect some delay and lost motion in the inauguration of the new proration schedules, and the coming week should bring about a closer adherence to the program outlined by the commission.

THE OIL WEEKLY
Estimated Average Daily Production in Barrels

District	For Week Ending Dec. 10	Dec. 3
TEXAS—		
Texas Panhandle	49,050	45,475
North and West Central Texas	73,660	73,350
West Texas	164,520	163,050
East Central Texas	49,400	48,800
East Texas Field	365,400	354,000
South Texas	55,200	55,800
Total Texas outside Gulf Coast	757,230	740,475
Texas Gulf Coast	133,750	133,750
Total	890,980	874,225
OKLAHOMA—		
Oklahoma City	94,560	63,220
Seminole District	122,800	124,680
Other Oklahoma	178,860	179,865
Total Oklahoma	396,220	367,765
KANSAS—		
Ritz-Decker	13,575	16,375
Voshell	6,620	6,405
Other Kansas	70,695	72,680
Total Kansas	90,890	95,455
LOUISIANA—		
North Louisiana	28,775	29,250
Louisiana Gulf Coast	34,000	35,300
Total Louisiana	62,775	64,550
ARKANSAS	33,700	33,675
CALIFORNIA—		
Long Beach	70,000	69,000
Santa Fe Springs	57,000	57,500
Midway-Sunset	49,500	46,000
Kettleman Hills	61,000	61,500
Other California	237,500	232,000
Total California	475,000	466,000
MOUNTAIN STATES—		
Wyoming	34,700	34,600
Montana	5,800	6,400
Colorado	2,950	2,750
New Mexico	31,600	31,450
Total Rocky Mountain States	76,050	75,200
EASTERN STATES	101,850	96,800
MICHIGAN	19,550	19,250
Total United States	2,147,015	2,092,920

California Fields Slowly Declining Toward Allowable

THE sharply lower total of drilling operations in California should be reflected in the future by a smaller potential production of present proven fields. Every field in the state, with the possible exception of Kettleman Hills, is showing a slow decline. As the potential approaches actual daily production, danger of overproduction automatically passes. The allowable is now less than half of the acknowledged potential, but it is doubtful whether the state could make anywhere near the potential upon which the present curtailment is based.

Kettleman Hills is a great field, and can produce two, three or four times the present daily output. Many of the best wells are shut in entirely, and its potential is much more impressive than generally believed, even if smaller than indicated by various committees and organizations.

State production is running more than 25,000 barrels above the allowable. Failure to reduce this excess has weakened the curtailment program, but the umpire is trying to bring the stubborn operators in line.

Agitation for open flow tests in several fields is current, but the major purchasing companies say the operators must make up their excesses within 30 days after the tests are concluded. Nobody can make such a guarantee, and the open flow tests will not be held.

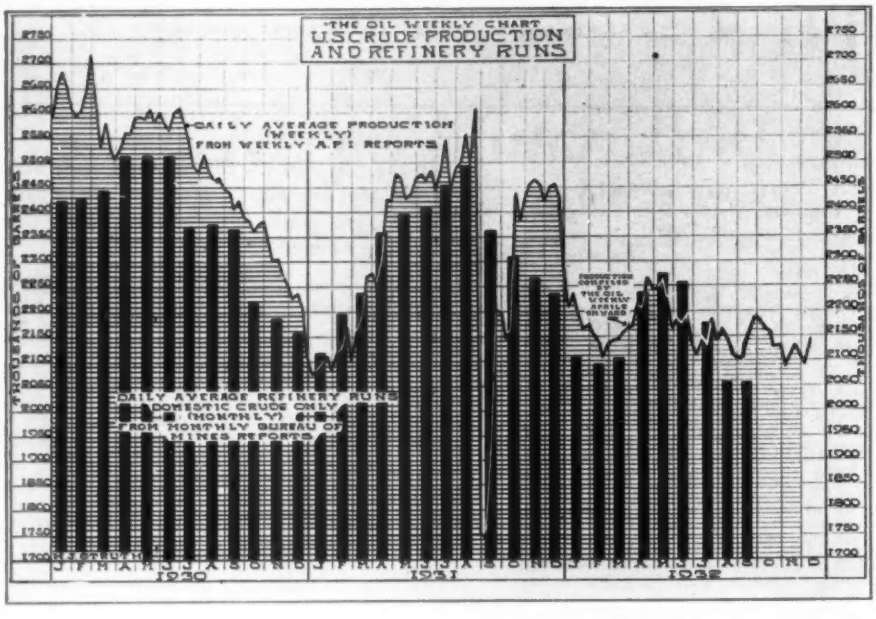
Long Beach, Kettleman Hills and Santa Fe Springs are the worst offenders. It may be necessary to give Kettleman Hills a 60,000-barrel allowable to make peace. Operators in this field do not want to cut back to 54,000 barrels, and they have been overproducing around 7000 barrels daily for a month.

The latest plan being considered by large integrated Pacific Coast companies is an exchange of California oil for Mid-Continent crude. Under the plan the third grade gasoline requirements of the Pacific Coast would be met by low grade Mid-Continent crude, while the best California gasoline would be marketed along the Atlantic seaboard for its anti-knock qualities. In this way, the fear of Mid-Continent gasoline would be eliminated.

Refined Market Compares With Year Ago Conditions

LIGHT jobber buying coupled with increased offerings of distressed material from East Texas and colder weather throughout the Middle West, were factors to which are charged the sub-sluggish condition in the low octane refinery gasoline market. On the other hand some of these same factors were responsible for a general pick up which saw prices for natural gasolines increase from one-eighth to one-quarter cent above levels existing during the preceding week. It is understood that this demand was due largely to the takings of companies, which own the Great Lakes pipe line for transportation into northern markets rather than to jobbers buying which continues at the lowest point in many months. Consumer demand for kerosene remained good but the supply was slightly larger and the tendency was toward softening locally although prices remained at the level of the week before. Few observers believe that present conditions can obtain for very long. The general market although on a general decline during the past three weeks measures up favorably with the condition which existed a year ago when all factors are considered.

Oklahoma Group 3 prices, exclusive



of the one-cent federal tax, appeared to be as follows:

Refinery Gasolines: Low octane U. S. motor, 3⅜ to 3⅝ cents; middle octane, 3½ to 3¾ cents; high octane 3¾ to 4 cents; 60-62, 400 e.p., 3½ to 3¾ cents; 64-66, 390 e.p., 3⅝ to 3⅞ cents; 64-66, 375 e.p., 3¾ to 4 cents; and 68-70, 360 e.p., 4⅛ to 4⅜ cents.

Natural Gasolines: 12 to 15 pounds vapor, 4¼ to 4⅜ cents; 16 to 18 pound vapor, 3⅞ to 4 cents; 18 to 20 pound vapor, 3¾ to 3⅞ cents; and 26-70, 3 to 3⅛ cents.

East Texas Buyers Agree to Take Surplus Connections

Dallas, Texas.—Major crude purchasing companies that have made substantial reductions in their nominations for the East Texas field agreed, with some exceptions, to continue to take the surplus oil at a meeting of the East Texas well connection committee held here December 3. Leslie McKay, chief deputy supervisor of the oil and gas division of the Texas Railroad Commission, presided at the meeting, having been appointed chairman of the committee. Jack Pew, Sun Oil Company, formerly was chairman, and will continue to serve with the committee as vice chairman.

The combined nominations of the oil buyers represented at the meeting accounted for about 297,000 barrels daily. Lists of unconnected wells submitted to the committee from several sources totalled about 250, but duplications were expected to reduce the number to about 200. However, Chairman McKay has since mailed to each purchaser a list of property owners supposedly in need of connections, showing the lease name, number of wells and nearest pipe line. This list accounts for 178 separate operators and 285 wells. The buyers are requested to notify the chairman if they are willing to absorb the wells nearest their lines, or take on same through an exchange arrangement.

It became known unofficially that nearly all large buyers in the East Texas field represented at the Dallas meeting wanted some relief from connections, but deferred action to await the results of the enforcement of the lower allowable and new method of proration effective December 10.

Imports of Foreign Oils Show Big Comparative Drop

IMPORTS of crude and refined oils at principal United States ports for the week ended December 3 totaled 492,000 barrels, a daily average of 70,286 barrels, compared with a daily average of 139,571 barrels for the week ended November 26, and 108,643 barrels daily for the four weeks ended December 3. These figures are from the latest report of the American Petroleum Institute.

For the same week, ending December 3, receipts of California crude and refined oils at Atlantic and Gulf Coast ports were reported to total 434,000 barrels, a daily average of 62,000 barrels, compared with a daily average of 45,000 barrels for the week ended November 26, and 36,643 barrels daily for the four weeks ended December 3.

New York.—Great Britain will carry the dispute to The Hague court unless the Persian government reinstates the Anglo-Persian Oil Company's concession to important oil areas in Persia, according to press dispatches of December 9.

The Persian government cancelled Anglo-Persian Oil Company's concession a week previous to the above dispatches, charging that the company had not made the stipulated royalty returns and that it had exploited the country. The concessions were granted prior to adoption of the constitution of Persia in 1906.

The oil company gave notice of appeal immediately upon receiving news of the cancellation, but the Persian minister of finance declared his government's decision was final.

Captain Anthony Eden, English undersecretary for foreign affairs, declared the Persian government would be held responsible for any damage to the company's interests, for failure to give it adequate protection, and for interference with its property. The House of Commons in England has been informed of its government's attitude in the matter.

Mills Recommends Sales Tax But Not for Gasoline

Washington, D. C.—Imposition of a manufacturers' excise tax of 2¼ per cent as a substitute for those excise taxes in the 1932 law "which experience has demonstrated are relatively unproductive and give rise to serious administrative difficulties" is recommended by Secretary of the Treasury Ogden L. Mills in his annual report, just submitted to Congress.

Such a measure, it is declared, would yield about $355,000,000 a year. Under its provisions, as proposed last year when Congress was considering tax legislation, manufacturers of oil products would be included and the taxes on imports would be amended to provide the same rate, in all probability.

In addition, the secretary recommends that the gasoline tax, which is effective only until next June, be continued for another year, providing an additional $137,000,000 in revenue.

"In view of the misunderstanding as evidenced in the congressional debates of last winter," Mr. Mills explained, "I must emphasize that I am not recommending a general sales or turnover tax, with the in-

Crude Runs to Stills, Motor Fuel Stocks, Gas, and Fuel Oil Stocks and Cracked Gasoline Production, Week Ended December 3, 1932

(Figures in barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		MOTOR FUEL STOCKS					Gas and Fuel Oil Stocks	Daily Charging Capacity of Cracking Units			Cracked Production Daily Average
	Potential Rate	Reporting		Daily Average	% Operated	(a) At Refineries	(b) Bulk Terminals	(b) In Transit	(c) Other M.F. Stocks	Total Motor Fuel		Potential Rate	Reporting		
		Total	%										Total	%	
East Coast	644,700	638,700	99.1	465,000	72.8	3,749,000	6,611,000	1,071,000	290,000	11,721,000	9,237,000	344,400	326,400	94.8	87,000
Appalachian	144,700	135,000	95.0	79,000	58.5	1,081,000	495,000	24,000	185,000	1,785,000	758,000	59,100	57,600	97.5	25,000
Ind., Ill., Ky.	434,900	424,000	97.5	292,000	68.9	3,019,000	3,314,000	50,000	155,000	6,538,000	3,757,000	341,400	328,200	96.1	84,000
Okla., Kans., Mo.	459,300	390,000	84.9	181,000	46.4	3,093,000	748,000	.....	850,000	4,691,000	2,790,000	257,400	238,100	92.5	42,000
Inland Texas	315,300	177,700	56.4	77,000	43.3	1.088,000	71,000	.....	205,000	1,364,000	2,155,000	117,300	95,100	81.1	20,000
Texas Gulf	555,000	542,000	97.7	359,000	66.2	5,585,000	218,000	.....	200,000	6,003,000	8,880,000	506,500	495,500	97.8	83,000
Louisiana Gulf	146,000	142,000	97.3	72,000	50.7	1,148,000	142,000	.....	30,000	1,320,000	3,128,000	74,400	74,400	100.0	18,000
North La.,—Ark.	89,300	79,000	88.5	44,000	55.7	171,000	25,000	20,000	50,000	266,000	496,000	29,500	25,500	86.4	10,000
Rocky Mountain	152,000	138,000	90.8	27,000	19.6	1,071,000	.....	.....	10,000	1,081,000	441,000	71,400	68,100	95.4	6,000
California	915,100	866,100	94.6	410,000	47.3	12,326,000	.....	.....	2,625,000	14,951,000	100,344,000	197,700	197,700	100.0	44,000
TOTALS WEEK: December 3, 1932	3,856,300	3,532,500	91.6	2,006,000	56.8	32,331,000	11,624,000	1,165,000	4,600,000	49,720,000	131,986,000	1,999,100	1,906,600	95.4	419,000
November 26, 1932	3 856 300	3,545,500	91.9	2,126,000	60.0	31,619,000	11,525,000	1,270,000	4,670,000	49,084,000	132,526,000	1,999,100	1,906,600	95.4	437,000
Below are set out estimates of Crude Runs to Stills and Motor Fuel Stocks on B. of M. Basis for Week Dec. 3, 1932 compared with certain Dec. 1931 Bureau figures.															
Estimate B. of M. Basis Week Dec. 3, 1932				2,080,000	(d)	32,930,000	13,240,000		4,600,000	50,770,000					440,000
U.S.B. of M. December 1931 Figures: —					12/1	35,103,000	13,395,000		3,497,000	51,995,000					
December 1931 Daily Average Crude Runs				2,346,000	12/31	38,620,000	13,764,000		3,787 000	56,171,000	December, 1931 Daily Average Cracked Prod.				486,000

(a) Stocks at refineries, except in California district, which includes stocks of finished gasoline and engine distillate at refineries, at water terminals and at sales distributing stations and any amounts in transit thereto.
(b) By districts, East of California only. In California, bulk terminal and in transit stocks are included under 'At Refineries" heading. See note (a).
(c) Estimated. Includes motor fuel in pipe lines and unblended natural gasoline at refineries and plants, also blended M. F. at plants.
(d) Estimated to permit comparison with A. P. I. Economics Report which is on Bureau of Mines basis.

evitable pyramiding of the tax, but a manufacturers' excise tax, imposed at one point only."

At the present time, the report shows, the deficit for the current fiscal year is estimated at $1,146,000,000, exclusive of debt retirement, and for the fiscal year 1934 at about $307,000,000. However, it is pointed out, under prevailing circumstances these estimates are qualified by major uncertainties "because there is little to indicate the rate at which recovery will take place, and little previous experience on which to judge the effect of certain features of the individual income tax under the new revenue law."

Comparison of Permits Granted for New Wells

	For week ending Dec. 10	Total this month	Total this year	Total this date last year	1932 year total
Arkansas	1	2	26	34	34
California	4	13	330	330	342
Louisiana	8	17	414	296	309
Kansas	22	32	424	435	475
Michigan	5	10	178	101	110
Oklahoma	33	54	969	787	842
Texas	202	347	6687	6496	6981
Totals	275	475	9028	8479	9093

Abandoning Open Flow Test Cancels Much Field Work

Huntington Beach, Calif.—Postponement of the open flow test for the Huntington Beach field has sharply reduced the amount of field work to be done on short notice. Several operators had planned to clean out or repair a large number of idle producers, but the postponement has obviated the necessity for such work. This second failure to carry out an open flow test seems to have reduced the possibility of a future test to a minimum. One company had planned to equip and repair more than 80 producing wells that had been partially stripped for the benefit of active producers. The test would have furnished work for a large number of men who have been superintendents, engineers, drillers, gaugers and geologists. It has been possible to obtain a very high class of men for work which would have been done normally by miscellaneous field men.

More than 200 of the 542 wells in the field are idle. Most of the idle wells will require work of some kind to place them in condition for an open flow test.

Washington, D. C.—The Secretary of the Interior has authorized a sale of oil and gas leases under the mineral leasing act of 3921 acres of land in Wibaux and Fallon Counties, Montana, by public auction at Billings, Montana, January 11.

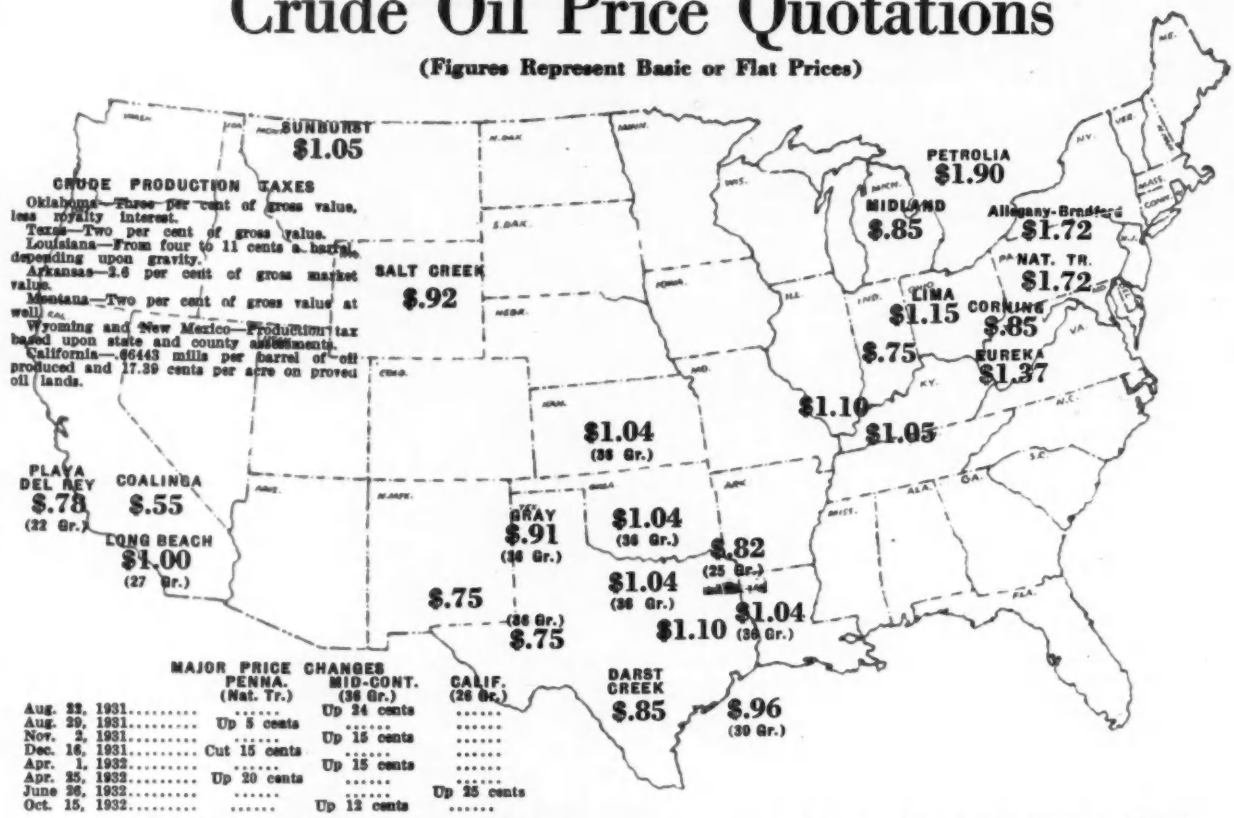
The lands will be offered for leasing in tracts ranging in area from a minimum of 119 acres to a maximum of 639 acres. They are located in the Ash Creek, Cabin Creek, Baker, Lookout, Hidden Water, and Little Beaver fields, valuable largely for the production of gas.

Summarized Review of Week's Field Results

State—	Completions	Oil wells	Gas wells	Failures	Initial prod
Arkansas	2	0	0	2	0
California	6	6	0	0	1,825
Illinois	0	0	0	0	0
Indiana	0	0	0	0	0
Kansas	10	7	0	3	8,014
Kentucky	6	4	0	2	85
Louisiana	11	2	1	8	850
Michigan	7	4	0	3	1,795
Mississippi	0	0	0	0	0
New Mexico	3	3	0	0	20,728
New York	0	0	0	0	0
Ohio	26	7	11	8	121
Oklahoma	23	11	3	9	4,983
Pennsylvania	5	3	0	2	5
Texas	212	170	3	39	924,522
West Virginia	7	3	2	2	86
Miscellaneous	7	5	1	1	166
Totals	325	225	21	79	963,280

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.)
Aug. 22, 1931	.....	Up 24 cents	.....
Aug. 29, 1931	Up 5 cents	.....	.....
Nov. 2, 1931	.....	Up 15 cents	.....
Dec. 16, 1931	Cut 15 cents	.....	.....
Apr. 1, 1932	.....	Up 15 cents	.....
Apr. 25, 1932	Up 20 cents	.....	.....
June 26, 1932	.....	.....	Up 25 cents
Oct. 15, 1932	.....	Up 12 cents	.....

Official Postings and Differentials *(Revised to December 9, 1932)*

CALIFORNIA: (Effective June 26, 1932).

Signal Hill, Seal Beach, Alamitos Heights, Huntington Beach, Olinda-Brea Canon, Torrance, and Richfield: 14 to 19.9 gravity 65 cents; 20-20.9 gravity 69 cents; 21 gravity 74 cents; 22 gravity 79 cents; 23 gravity 84 cents; 24 gravity 89 cents; 25-25.9 gravity 93 cents, top posting for Torrance and Richfield; 26-26.9 gravity 97 cents, top price for Seal Beach, Alamitos Heights and Huntington Beach: 27-27.9 gravity $1.00; 28-28.9 gravity $1.03, the top price for Olinda Brea Canon; 29-29.9 gravity $1.06; and 30-30.9 gravity $1.09, the Signal Hill top posting.

Inglewood: 14 to 19.9 gravity 65 cents; 20-20.9 gravity 71 cents; 21 gravity 77 cents; 22 gravity 82 cents; 23 gravity 87 cents; 24-24.9 gravity 92 cents, the top price.

Playa Del Rey: 14 to 19.9 gravity 65 cents; 20-20.9 gravity 69 cents; 21 gravity 74 cents; 22 gravity 78 cents; 23 gravity 82 cents; 24 gravity 86 cents; 25 gravity 91 cents; 26-26.9 gravity 96 cents, the top price. Field gathering charges of 5 cents a barrel.

Athens, Rosecrans and Dominguez: 24-24.9 gravity 89 cents; 25-25.9 gravity 93 cents; 26 gravity 97 cents; and 27-27.9 gravity $1.00 with three cents additional for each degree gravity upward, ending at 32-32.9 gravity $1.15.

Elwood Terrace: 33-33.9 gravity $1.04 and 6 cents more for each additional degree of gravity, ending with 37-37.9 gravity $1.28, all prices f.o.b. ship.

Whittier and LaHabra: 14 to 19.9 gravity 65 cents; 20-20.9 gravity 68 cents; 21 gravity 72 cents; 22 gravity 77 cents; 23 gravity 83 cents; and 24-24.9 gravity 89 cents, the top price.

Montebello: 14 to 20.9 gravity 65 cents; 21-21.9 gravity 67 cents; 22 gravity 70 cents; 23 gravity 73 cents; 24 gravity 76 cents; 25-25.9 gravity 80 cents, the top price.

Coyote Hills: 14 to 20.9 gravity 65 cents; 21-21.9 gravity 66 cents; 22 gravity 70 cents; 23 gravity 76 cents; 24 gravity 81 cents; 25 gravity 86 cents; 26 gravity 90 cents; 27 gravity 94 cents; 28 gravity 98 cents; 29 gravity $1.02; and 30-30.9 gravity, $1.05, the top price.

Santa Fe Springs: 24-24.9 gravity 73 cents; 25 gravity 79 cents; 26 gravity 84 cents; 27 gravity 89 cents; and 28-28.9 gravity 94 cents, with 4-cent differential for each degree of gravity upward to 35-35.9 gravity $1.22.

Newhall, McKittrick and Kern River: 14 to 19.9 gravity 55 cents.

Midway-Sunset, Elk Hills and Buena Vista: 14 to 19.9 gravity 55 cents; 20-20.9 gravity 59 cents; 21 gravity 63 cents; 22 gravity 69 cents; 23 gravity 75 cents; 24 gravity 81 cents; 25-25.9 gravity 87 cents and 5-cent differential for each additional degree gravity ending with 30-30.9 gravity $1.12.

Lost Hills: Same as Midway-Sunset up through 25-25.9 gravity 87 cents, then 26-26.9 gravity 91 cents; 27 gravity 94 cents; 28 gravity 99 cents; 29 gravity $1.02; and ending 30-30.9 gravity $1.05.

Coalinga: 14 to 19.9 gravity 55 cents; 20-20.9 gravity 59 cents; 21 gravity 62 cents; 22 gravity 65 cents; 23 gravity 68 cents; 24 gravity 72 cents; and ending 25-25.9 gravity 75 cents.

Wheeler Ridge: 14 to 19.9 gravity 55 cents; 20-20.9 gravity 57 cents; and 21-21.9 gravity 60 cents, with 3 cents more for each additional degree of gravity, ending 25-25.9 gravity 72 cents.

Oklahoma, Kansas, North Texas: (Effective October 15, 1932).

Below 28 gravity (Magnolia) 79 cents; below 29 gravity (others) 88 cents with differential of 2 cents for each degree to 40 gravity and above which is posted at $1.12.

North Texas: (Effective October 15, 1932).

Below 28 gravity (Magnolia) 79 cents; below 29 gravity (others) 88 cents, with two-cent differential upward, ending 40 gravity and above, $1.12.

Texas Panhandle: (Effective October 15, 1932).

Gray County: Below 35 gravity: 87 cents, with differential of 2 cents for each degree to 40 gravity and above, 99 cents.

Carson and Hutchinson Counties: Below 35 gravity: 75 cents with differential of 2 cents for each degree to 40 gravity and above which is posted at 87 cents.

West Texas: (Effective October 15, 1932).

Crane-Upton, Crockett, Ector, Howard-Glasscock, Pecos and Winkler Counties, Texas and Lea County, New Mexico: 75 cents.

Southwest Texas: (Effective October 15, 1932).

Refugio Heavy: 80 cents.

Refugio Light: (Same as Gulf Coast—see below).

Gulf Coast: (Effective October 15, 1932).

Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble and Refugio Light: Below 25 gravity: 90 cents, with differential of 1 cent for each degree to 36 gravity which is $1.02 then 2 cent differential to 40 and above which is $1.10.

Mirando: 90 cents; Salt Flat: 85 cents; Darst Creek: 85 cents; Pettus: $1.00; Markham: Same as Gulf Coast.

Conroe, Texas: (Effective July 18, 1932).

Two-cent differential applies, beginning 35-35.9 gravity, 90 cents, ending 40 gravity and above, $1.

East Texas: (Effective October 15, 1932).

Flat Price: $1.10.

North Louisiana and Arkansas: (Effective October 15, 1932).

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Cricton, DeSoto, El Dorado, Cotton Valley, Sarepta, Cartersville: Below 25 gravity 80 cents with differential of 2 cents for each degree beginning with 25 gravity and ending with 40 and above. Top price $1.12 a barrel.

Smackover: 75 cents.

Rocky Mountain States: (Effective June 1, 1932).

Salt Creek: Below 29 gravity 76 cents; 29-29.9 gravity 78 cents with differential of 2 cents each degree to 40 and above. Top price $1.00.

Elk Basin and Grass Creek: $1.10; Big Muddy: 98 cents; Lance Creek: $1.15; Rock Creek: 90 cents; Sunburst: $1.05; Osage: 98 cents; Cat Creek: $1.20; Pondera: 90 cents; Hogback, New Mexico: 80 cents.

Mid-Western States: (Effective April 11, 1932).

Lima: $1.15; Indiana: 75 cents; Illinois: $1.10; Princeton: $1.10; Wooster: $1.25; Western Kentucky: $1.05.

Pennsylvania: (Effective October 3, 1932).

Bradford District: $1.72; National Transit Oil: $1.72; Southwest Pennsylvania Pipe Line Oil: $1.42; Eureka Pipe Line Oil: $1.37; Buckeye Pipe Line Oil: $1.22; Corning Crude: 85 cents.

Michigan: (Effective July 13, 1932), Midland: 85 cents a barrel. Muskegon: 76 cents to $1.00 a barrel.

Canada: (Effective Nov. 3, 1931).

Petrolia: $1.90; Oil Springs: $1.97.

Mitchell Recommends Trust Law Changes in Report

Washington, D. C.—Formulation of legislation lightening the burden of the anti-trust laws "as a temporary expedient in the present emergency without a permanent departure from the fundamentals of our present system" is advocated by Attorney General Mitchell in his annual report to Congress.

The attorney general also recommends revision of the national bankruptcy act, "the need for which," he says, "is evident."

"In the field of anti-trust laws it is evident that overproduction and low prices have increased the pressure from business for legislation allowing combinations and concerted action to limit production and thus increase prices without awaiting gradual readjustment from the natural law of supply and demand," Mr. Mitchell declares. "It is also evident that if present restrictions against such combinations are withdrawn, the consuming public will have to be furnished governmental protection against excessive prices.

"We cannot do away with our competitive system without substituting governmental supervision of some kind to prevent unreasonable exactions from the public, and the prospect of projecting the government further into business regulation, by way of supervision of prices, is not an attractive one.

"This department has consistently maintained the position that the prohibitions of our anti-trust laws have not been abrogated by the business depression and the fact that industry has been operating in the red, and that the place to amend the anti-trust laws is in Congress and not in the Department of Justice."

With respect to the bankruptcy law situation, the attorney general recommends emergency legislation to permit of the reorganization of business concerns.

"There is one special feature of the proposed revision which should be mentioned," he points out. "In the process of industrial and commercial reconstruction the voluntary adjustment and reorganization of business units without destruction through liquidation is essential to the restoration of trade.

"The cumbersome process of corporate reorganization through equity receiverships and mortgage foreclosures affords no hopeful opportunity in many cases for the speedy reorganization of going concerns, embarrassed by debt, even through agreement of large majorities of their creditors. The proposed revision of the bankruptcy act includes a simple process for corporate reorganization in bankruptcy.

"The need for this legislation at the present time is so urgent that these measures should not await the general revision of the bankruptcy law, but should be adopted as amendments to the present act, as emergency legislation, necessary in the process of reconstruction."

Stanolind Gets Refund on Sinclair Tax Overpayment

Washington, D. C.—Taxes in the sum of $38,188.73 have been refunded to Stanolind Crude Oil Purchasing Company, formerly Sinclair Crude Oil Purchasing Company, Tulsa, Oklahoma, by the Bureau of Internal Revenue as a result of a finding that an over-assessment of that amount had been made in the company's income tax for 1928.

The over-assessment, it was explained, was caused by the allowance of an additional deduction representing the adjusted net loss sustained in the preceding taxable year which investigation disclosed was omitted from the return filed by the company.

Howard-Glasscock Proration Hearing Set December 19

Austin, Texas.—The Texas Railroad Commission has announced that a hearing will be held in Big Spring in December 19, to consider the proration orders in the Howard-Glasscock pool.

It is understood that a new method of prorating the allowable will be considered at that time, and also further measures for the prevention of physical waste.

Supreme Court Refuses Hearing of East Texas Case

Washington.—The United States Supreme Court on December 6 refused to consider on its merits the appeal of the Texas Railroad Commission to test the decision of a three-judge federal court which held invalid its East Texas proration order issued under the state conservation law which was set aside recently by enactment of a new law.

The court stated the appeal would not be considered because the statute under which the order was issued was no longer in effect.

Tulsa Engineers to Hear Lecture on Wrought Iron

Tulsa.—The program committee of the Mid-Continent Section, American Institute of Mining and Metallurgical Engineers, has announced a program of more than usual interest for the meeting of Monday, December 12, to be held at the University Club, Tulsa, at 8:00 p.m. The A. M. Byers Company will present its picture, "The New Story of Wrought Iron," and will have James Aston, inventor of the Byers process and internationally known metallurgist, to explain features of the wrought iron process and to lead a round table discussion on manufacture of tubular goods and metallurgy. The second feature of the evening will be a paper on experiences in the use of small tapered tubing by R. R. Hawkins and M. R. Terry of The Texas Company.

The public has been invited to attend.

James Aston, who this week addresses the Mid-Continent Section, American Institute of Mining and Metallurgical Engineers at Tulsa, and the Engineers Club at Bartlesville, is consulting metallurgist for the A. M. Byers Company and head of the Department of Mining and Metallurgical Engineering of Carnegie Institute of Technology. Mr. Aston was born in England in 1876 and as a young man came to the United States to make his home in Milwaukee. In 1898 he was graduated from the University of Wisconsin with a B.S. degree in electrical engineering. In 1908 he returned to the university to do research work in metallurgy and a year later became instructor in metallurgy in that school. After four years in this connection, during which time he received the degree of Chemical Engineer, he went to the University of Cincinnati to do analytical work in metallurgy. Leaving the University of Cincinnati in 1914 he became connected with the United States Bureau of Mines, specializing in corrosion problems. In the following year he joined the Buyers organization as chief metallurgist. He is a member of the American and British Iron and Steel Institute, the American Electro-Chemical Society, the American Institute of Mining and Metallurgical Engineers, the American Society for Testing Materials, the American Society for Steel Treating, and the Engineers Society of Western Pennsylvania.

ing some salt water along with oil, all but one of the deep wells were entirely free of water intrusion, that exception being a structurally low well, the Humble-Gulf interests' J. H. P. Davis 1, southern edge well which encountered the top of the deep oil sand about 150 feet lower than in any other well, first entering the oil-bearing formation at 5279 feet and going into it to 5414 feet to be completed in December, 1931, as a 1000-barrel oil producer showing initially 12 per cent salt water. Plugged back several months later to 5383 feet, the well came in the second time flowing 300 barrels net oil and 65 per cent salt water daily through a three-eighths-inch choke. In the north end of the field, on the other hand, The Texas Company's Wolters 1 proved free of water intrusion when completed in August, 1932, for an initial flow of 1500 barrels oil daily through a one-half-inch choke from sand first encountered at 5283 feet and drilled to 5322 feet.

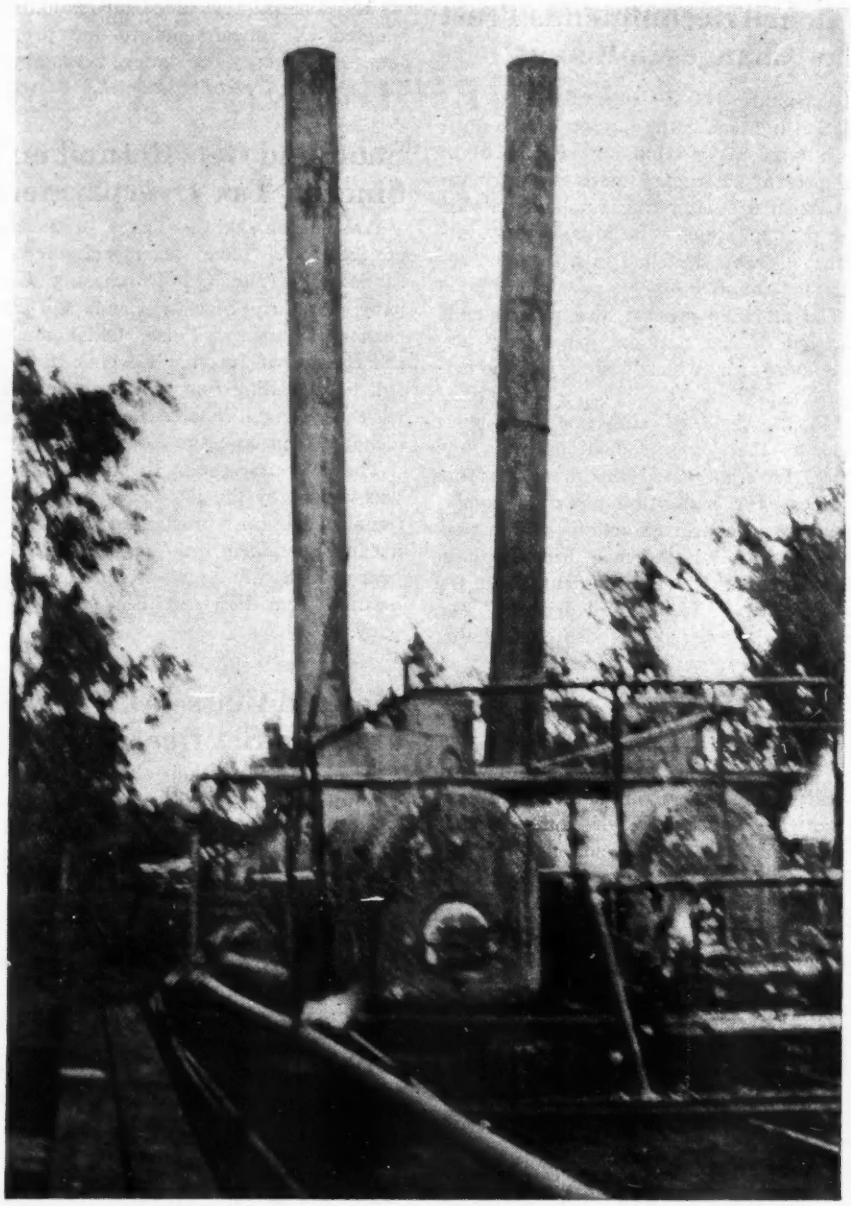
Since development is being directed now largely to the deep horizon, which offers a large thickness of oil sand lying well above the water level, the disposal of salt water is not expected to become an important problem in the field for a long time.

Although the discovery well at Rabb Ridge was completed in May, 1931, subsequent development was relatively slow, since there was no competitive drilling, and total oil production for 1931 was only 800,000 barrels. As new wells were completed, however, the field's output gradually increased. To show the production trend, as well as the total amount of oil recovered from the field to the middle of September, 1932, the following table is given:

Period	Barrels Production
1931: Total	800,000
1932: First 6 months	1,742,000
July	470,000
August	485,000
September: first 15 days	255,000
Total	3,752,000

Pipe Line Facilities

There are two pipe line outlets for Rabb Ridge oil production. One of the outlets is a six-inch line which Gulf Pipe Line Company built shortly after discovery of the field, extending the short distance to the company's main line system leading from Orchard and Big Creek fields eastward to Port Arthur on the coast. This line handles oil of Gulf Production Company and has also been taking care of the output of The Texas Company's producing well. The other market outlet is an eight-inch line which Humble Pipe Line Company extended into the area from Sugarland field when Humble Oil & Refining Company became a producer at Rabb Ridge.



Shallow wells furnish ample water of desirable quality for operating boilers such as these at Rabb Ridge, as well as for other uses in the drilling and production operations.

Depths and Ages of Producing Sands

As indicated previously, five separate oil-bearing sands have been found to exist at Rabb Ridge. The shallowest commercial oil sand is that which produced in the discovery well from 3057-3089 feet, originally yielding 24.5 corrected gravity oil at the rate of 400 barrels daily. The discovery well, incidentally, was Lockwood & Sharp A-1 of Cullen & West and Gulf Production Company, completed May 21, 1931. The producing formation was identified as a sand of the Miocene series. Subsequent performance of the discovery well indicated this sand to be of restricted commercial importance, for the well produced satisfactorily for only about five months. In the deepening operation which was then undertaken, a gas blowout occurred, ruining the drilling rig and making it necessary to junk and abandon the well.

Within the next 1000 feet lie three additional commercially important oil sands of Miocene deposition. One is found at depths of 3100 to 3200 feet. Two wells were completed in it as oil producers with initial production around 200 barrels daily, and one as a gas well, while various other wells have yielded oil-showing cores from the sand. Production from this sand was short-lived, however, and wells completed in it were soon deepened.

The next important oil sand occurs at the 3500-3600-foot horizon. Two wells

have been completed in it. One flowed 85 barrels per hour initially, and is still on production; but the other, which at first flowed 24 gravity oil at the rate of 600 barrels daily, was deepened about six months after the original completion.

The lowermost of the four Miocene sands in the field is found between 3800 and 4000 feet. One well has been completed in it, and is still producing. It flowed initially at the rate of 1200 barrels daily through a three-fourths-inch choke.

The fifth and deepest oil-productive formation known in the field is that which is the primary objective of nearly all current development, the thick sand which produces at depths as shallow as about 5100 feet on the top of the structure and as deep as almost 5400 feet on the edges of the structure. The crude oil from the Rabb Ridge deep sand registers corrected gravity of about 25 degrees, emerging from the wells usually at temperatures of 85 to 90 degrees.

This deep sand is identified as the Marginulina zone, basal member of the Middle Oligocene series of sediments. That zone yields prolific oil production in various other Gulf Coast fields, including Sugarland, Lost Lake, and the recently discovered, deep field at Buckeye, Matagorda County.

Prospects for Deeper Production

It still remains to be seen whether or not additional productive sands will be found beneath the prolific 5100-5400-foot Oligocene horizon. For as yet no well has been drilled past the latter level, the deepest hole in the field being the previously mentioned southern edge test, J. H. P. Davis 1, which was drilled to 5414 feet and later plugged back to 5383 feet.

All deep wells having stopped in the oil sand, no test has yet reached the salt plug which is assumed to have been pushed up beneath the field to cause the oil accumulation in the upward tilted sands. If the salt dome which is postulated actually exists it is quite likely a very deep-seated one, like those assumed to be present under some other Gulf Coast fields, including Goose Creek, Orange, Port Neches, Esperson, Manvel, and Hankamer. Tests drilled as far as 7000 feet or deeper in some of those fields have failed to encounter cap rock or salt.

The extent to which the supposed salt plug has pushed up through the deep sediments at Rabb Ridge has a highly important bearing, of course, upon whether or not additional oil production will be found beneath the 5100-5400-foot horizon. It is possible that drilling below the latter zone may result only in encountering the cap-rock covered salt of the assumed salt dome, as was the case in drilling through the regular 3600-foot oil horizon in the adjacent Sugarland field. It is more probable, however, that the dome formation lies considerably below the depths reached. For geophysical investigations carried out at Rabb Ridge prior to the discovery of oil indicated an uplift, but suggested that if the elevation of the sediments manifested a salt dome then the dome must be unusually deep.

If the salt plug does prove to lie considerably deeper than the present deep producing horizon, and sands normally lying below the Marginulina zone are only bent upward instead of having been penetrated by the salt mass, then there are important possibilities of deeper production at Rabb Ridge. For below the Marginulina zone may be expected the Frio or upper zone of the Lower Oligocene series, which contains oil-producing sands at Barbers Hill, Pierce Junction, Mykawa, and elsewhere on the Gulf Coast; and after that the Vicksburg or lower zone of the Lower Oligocene, which embodies oil-bearing sands at Pierce Junction, Barbers Hill, and other salt domes.

If the salt is exceptionally deep at Rabb Ridge, as the geophysical instruments indicated it may be, then at least the upper and possibly also the lower of the two Lower Oligocene zones may offer sands lying sheet-like over the dome and containing accumulations of oil. In a wildcat well drilled on a local "high" in Harris County, where the Middle Oligocene sediments were found from 5200 to 5600 feet, or at about the same depths as at Rabb Ridge, the Frio was encountered at 5600 feet and was still being logged when drilling ceased at 6100 feet; while similarly at Moss Bluff dome, Liberty County, where formations have been lifted up and thinned, a thin section of the Frio was found around 6100 feet, with the basal or Vicksburg zone of the Lower Oligocene extending at least to 6600 feet, the extent of drilling there. Thus it is seen that both the Frio and the Vicksburg zones may possibly be found at Rabb Ridge within the depth of 6500 feet, in which event they could be developed commercially if found to contain oil-bearing sands.

While the possibilities of undiscovered deep production at Rabb Ridge have been predicated above on the possibility of the salt plug lying sufficiently far below the 5100-5400-foot oil sand for the latter to be underlain by other sands spread blanket-like over the dome, there are nevertheless important possibilities of deeper production even in event the salt rises near to the levels already reached. For even if the salt has been pushed up into the Vicksburg or the Frio those formations may be expected to lie around the flanks of the dome, sloping downward and outward from the edges of the uplift. Thus they might be found productive of oil at least around the flanks of the dome.

In addition to the above mentioned two zones of the Lower Oligocene, there are also even deeper formations, deposited in Eocene time, which might possibly be found oil-bearing and within reach of the drill at Rabb Ridge, either on top of the dome or along its flanks. The Eocene sediments normally lying next below the Lower Oligocene are those of the Jackson series, now subdivided from top to bottom into the Fayette, McElroy and Diboll zones. The Jackson beds are found to contain numerous sands when drilled into along the landward margin of the coastal plains, as at Raccoon Bend field, where they produce oil; but nearer the coast, as at Rabb Ridge, the sands are fewer and thinner. Nevertheless, some of the salt dome fields almost as near the coast as Rabb Ridge, including Humble, Hull, and South Liberty, have produced oil from Jackson sands lying along their flanks. At Raccoon Bend the Jackson section has a total thickness of about 1000 feet, but on a flank of the Humble dome where it has been encountered it is not quite so thick. It is possible that at Rabb Ridge the entire Jackson series might be explored by drilling to 7500 or 8000 feet. Even the latter great depth can be reached with relative ease with modern deep drilling equipment, and in fact several areas in the United States now have commercial production from depths of 8000 feet or more.

Beneath the Jackson series oil tests of the Gulf Coast encounter respectively the Cockfield, and the Upper Saline Bayou zones in the upper Claiborne series of sediments, this series consisting in the vicinity of the Texas coast largely of clays but nevertheless containing some sands. The Cockfield zone at the top of the series produces oil at Pettus and Mount Lucas fields, and furnishes oil sands in the new Conroe field, Montgomery County, and possibly on the flanks of the Hull and Humble salt domes; while the Upper Saline Bayou contains oil sands at South Liberty and Esperson as well as at Humble and Hull. At Humble these two zones of the Claiborne series have a combined thickness of about 1200 feet.

The above discussion of possibilities of additional, deeper oil horizons at Rabb Ridge is necessarily, of course, of a very general and speculative nature, based only on the normal sequence of sediments and on conditions as found on some other domes. In actual exploration on the Gulf Coast conditions are found to vary greatly among different domes, the formations being lifted

and thinned to varying degrees by the risen salt, or otherwise variously affected. In consequence no one can foresee accurately in advance of drilling the thickness or the exact nature which a formation will have.

Thus very little can be said with certainty as to the possibilities of deeper production at Rabb Ridge aside from the mere recognition that such possibilities do exist. It may be added, perhaps, that sands which might be found at those lower levels can hardly be expected to be of as great commercial importance as the Oligocene zone which is now being exploited, judging by the fact that those older sands have never yielded more than minor fractions of the oil production of the Gulf Coastal region.

Rabb Ridge Drilling Practice

All drilling at Rabb Ridge is rotary. The derricks are 122-foot steel mounted on all-steel sub-structures which are seven feet high, permitting ample room beneath the derrick floor for such operations as manipulation of the heavy blowout preventers employed for controlling the high gas pressures encountered.

The rigs employed are of heavy type throughout. The steam is generated by two heavy boilers. Water for the boilers and for use with drilling mud and for other purposes comes from prolific shallow wells which have been drilled for those purposes. Two heavy mud pumps, capable of overcoming the high gas pressures which are encountered, are used, the size 14 by 7 by 16 being typical.

In the early period of development at Rabb Ridge the casing program was planned to permit completion in the Miocene sands lying between 3000 and 4000 feet, a surface string being set at a depth of several hundred feet, the second string being set immediately above the shallow oil sand, and screen then being run into the sand. Since it is no longer customary to complete wells in the shallower sands, however, the casing program has been revised; and now only two strings of casing are used in the 5100-5400-foot wells. The first string is usually 10¾-inch pipe cemented around 1250 feet, and the second is seven-inch o.d. cemented above the oil sand around 5000 feet. When the plugs are drilled following the latter cementing job the hole is carried down into the sand, and then screen is set in the sand to the bottom and sealed off into the seven-inch casing. Several joints of screen are used, usually from four to six joints, the amount depending on the amount of sand drilled, and the size being usually five-inch. Finally, a string of tubing, usually 2½-inch, is run almost to bottom, and the well flows through the tubing after being washed. The wells are ordinarily gauged for initial production estimates through three-eighths-inch or five-sixteenths-inch chokes, and so restricted flow at rate of about 50 barrels per hour, or 1200 barrels daily, showing about 500 pounds pressure on the casing and around 250 pounds on the tubing. When these wells are closed in, incidentally, they build up pressures as high as 2000 or 2200 pounds.

Since the drilling operations have settled down by now to more or less routine procedure, the time and costs required for each well have been cut down to remarkably low levels. Despite the fact that they are around 5300 feet deep, the wells are rigged up, drilled, and completed within an average time of about 35 days; and the total cost of a flowing well is only about $25,000.

Location and Accessibility of Field

Rabb Ridge field is located in a portion of the Texas Gulf Coastal region where salt domes have been found in large numbers at small intervals. Within a radius of only 10 miles there are five domes, as follows: Sugarland, six miles to the north; Blue Ridge, nine miles northeast; Big Creek, eight miles west; Long Point, nine miles southwest; and Nash, 10 miles south and a little west. Within a slightly larger radius a considerable number of other domes occur.

As stated previously, the field is only three miles south of the railway station of Thompsons, to which it is connected by a new gravel road. Automobile and truck traffic between the field and Houston commonly goes by way of Thompsons, and the town of Richmond, Fort Bend County seat, 14 miles west and a little north of Thompsons, the road between those two towns being a gravel road which is rough but passable in all weather, and the interval between Richmond and Houston being a concrete paved section of the Old Spanish Trail. From Rabb Ridge to Houston by way of Richmond is about 46 miles. Houston may be reached from the oil field by going east from Thompsons, crossing the Brazos River, and entering the Angleton-Houston highway, but the river must be crossed by ferry.

Since Rabb Ridge is in the midst of a large group of salt domes, the district in which it lies was naturally looked upon for a considerable time before the discovery of oil there as the possible location of an undiscovered dome. The particular area in which the field has been found to lie, early attracted the interest of oil prospecting companies and individuals, furthermore, because of being marked at the surface by a topographical high, a ridge located in the John Rabb Survey and called Rabb Ridge after the family of that name which lived in the community. That topographic feature is possibly the surface manifestation of the sub-surface uplift on which oil has accumulated, and the oil field which has been developed was named after the ridge.

For several years prior to completion of the discovery well, the Rabb Ridge area was regarded with added interest as a result of geophysical explorations carried out by various companies. Through torsion balance work several companies recognized that a structure of some kind was present. The prospect did not give the reaction of a shallow or even a fairly deep salt doom, however, and was classed simply as an anomaly of questionable nature, the opinion being that it might be either a very deep dome or a form of folding. Gulf Production Company was favorably enough impressed with the results of the torsion balance work which it did, nevertheless, to take leases covering a large area. The firm of Cullen & West, independent operators of Houston, had also become sufficiently interested in the area in the meantime to acquire large lease holdings.

No drilling was undertaken on the leases immediately, however, and the promise which they offered was perhaps reduced in the meantime through discouragements encountered in drilling other anomalous geophysical prospects in the same and adjacent counties. Ultimately Gulf Production Company and Cullen & West, holding leases covering the greater portion of the Rabb Ridge prospect, decided to pool their interests. Thus each then owned an undivided one-half interest in the entire, pooled lease block.

In accordance with terms of the pooling agreement, Cullen & West then began drilling a wildcat well, Lockwood & Sharp A-1, near the center of the north line of the John Rabb Survey. On May 21, 1931, about a month after drilling was started, the wildcat was completed as the discovery well of a new field, flowing 400 barrels of 24.5 corrected gravity oil daily through a one-fourth-inch choke from sand at 3057-3089 feet. The discovery well proved to be in the northern portion of the field.

As indicated previously, the completion of the original well was followed by discovery and development of additional Miocene oil sands. It was not until October, 1931, consequently, that the deep and prolific Oligocene oil horizon was found. The discovery well of that zone was the Cullen & West and Gulf Production Company joint test, A. P. George 2, which flowed 25 gravity oil initially at the rate of 1200 barrels daily from sands at 5123 to 5201 feet.

Texas Independents Voice Disapproval of New Law

Fort Worth, Texas, Dec. 9.—Disapproval of the market demand law as a basis for applying proration in the oil fields of Texas and opposition to the incorporation of acreage in fixing lease allowables were voiced by members of the Independent Petroleum Association of Texas at the annual meeting held here December 9. While not altogether against proration the organization expects to wage a fight against proration methods that exert an unreasonable penalty on independent producers in a given field. Officers of the association were re-elected but several changes were made among the group of regional vice presidents, the officers follows: J. R. Parten, Woodley Petroleum Company, Shreveport, president; Claude C. Wild, Fort Worth, executive vice president; Bert F. Weekly, Weekly Oil Corporation, Fort Worth, vice president for production; Chas. S. Richardson, Olney, vice president for royalty owners; H. L. Lockhart, Gradewater, vice president for refineries and marketers and George B. McCamey, Fort Worth, secretary-treasurer.

The eight regional vice presidents chosen follow: Mel Davis, Pampa; C. C. Duffey, Midland; Wallace Jenkins, Dallas; Harry Reynolds, Houston; T. O. Shappell, Wichita Falls; J. D. Sanderfer, Jr., Breckenridge; Fred Adams, Luling and C. R. Cole, Laredo.

Consideration of acreage in any form in fixing proration allowables was condemned in a resolution passed by the members as it is considered to be preliminary steps towards compulsory unitization. The market demand law was opposed when submitted to the legislature and the organization voted to continue its opposition based on the belief that the act is unsound in principle and impossible of application without dissemination and injury to the small operators.

Charging that proration of crude production has been administered largely for the benefit of a monoply for major companies, J. Edward Jones, New York, guest speaker, urged the independents to assist in purging the oil industry of governmental interference. He also solicited the aid of the small producers in seeking the removal of foolish and meddlesome officials and others who insist upon regulating independents out of existence. Jones is head of several royalty concerns and is also publisher of a monthly bulletin devoted to the economics of the petroleum industry.

Parten warned the membership that the market demand order to go into effect December 10 is a step towards ultimate unitization because of the power placed with the major companies, he advised the independents to switch from a policy of passive resistence to unfair proration laws and resort to vigorous opposition else the small operators will be exterminated. A speech on federal control of the oil industry by Col. Earnest O. Thompson, member of the Texas Railroad Commission, was read in the absence of the commissioner who was unable to attend because of illness of his father. E. G. Bedford, Midland Royalty Company representative, outlined the various means sometimes resorted to by producers and purchasers of oil to defraud royalty owners and suggested that a separate department to be created by the state to gauge wells and determine the gravity and temperature of oil.

LEONARD W. ORYNSKI, chief geologist for The California Company, was elected chairman of the Dallas Petroleum Geologists at Dallas, Texas. Other officers chosen for the ensuing year included: Joe M. Wilson, manager geological department Simms Oil Company, vice chairman; and J. A. Waters, geologist for Sun Oil Company, secretary-treasurer.

Hobbs Operators Agreed On Extension of Proration

Dallas, Texas.—Operators in the Hobbs field, New Mexico, are all in accord for an extension of voluntary proration of the field for another year upon the expiration of the present agreement on January 10, 1933. A meeting of the proration advisory committee here December 7 sounded out the attitude of the lease owners, and arrangements were made for the committee to meet early in January with officials of New Mexico at Santa Fe. A new proration agreement will then be drafted and signed for presentation to the state officials for approval. The state is an important owner of producing royalties in the field. E. G. Allen, Shell Petroleum Corporation, presided at the meeting.

A preliminary step toward a later revision of the method of allocating production allowables to leases and wells in the Hobbs was taken at the Dallas meeting at the request of E. A. Landreth, president Landreth Production Corporation, Fort Worth. Production quotas are now made on a basis of 75 per cent on 40-acre unit average potential, and 25 per cent for acreage. Landreth asked that less consideration be given potentials, since water encroachment on the west flank and high gas-oil ratio wells at the apex of the structure, or cap area, are being unduly penalized. Other operators concurred that the field is reaching a stage that a more equitable plan of proration may be possible by paying less attention to open flow gauges, which are taken via tubing and curve correction. The standing committee of engineers and W. E. Wrather, Dallas consulting geologist, who was engaged some months ago by the advisory committee to aid in accomplishing a unitization of the field, were delegated to investigate conditions with a view of submitting a substitute plan of fixing allowables. A report will be made at the Santa Fe meeting, but time will not be sufficient to apply a new plan to the field at the start of the new proration period in January.

Unitization of the field is more remote than was the case when the movement was launched about one year ago, but the idea has not completely abandoned. Acting on recommendation advanced by Wrather after a study of subsurface conditions in the field, the operators are taking steps to lower gas consumption through installation of packers on tubing in wells situated on the gas cap, and also reduce water encroachment upon west side wells by the same method. An investigation has revealed that many of the wells making water derive their supply largely from the gas depleted top section of the lime pay, and that an accurately placed packer on tubing can partially relieve the water situation.

Wrather stated that the so-called gas cap area will continue to grow as the reservoir pressure declines, but the rate of expansion can be retarded if adequate gas conservation measures are applied promptly. The withdrawal of 25,000 barrels of oil, more or less, daily, according to nominations by purchasers, is not as important a factor in the rapid spread of water, as is the voidage of gas found in the top section of the lime formation, according to Wrather. He predicted that the sulphur water would continue to advance rapidly upon the field as long as gas is wasted on the high point of the structure.

Low Prices Will Encourage California Wildcatting

Los Angeles.—The nature of development of the future in California is very difficult to foresee, but possibility of wildcatting in districts that have been neglected during development of the more accessible structures lends an interesting speculation to the doubtful period ahead. It was most natural to test the prospective areas ahead of remote districts, and the large number of fields opened proved the wisdom of such a choice. Most of the large structures which were easily mapped have been tested, but a good number of smaller structures remain to be drilled. Practically all of the drilling has been confined to Southern California.

May Lead to Discoveries

The tendency to push leasing and drilling operations into the more remote districts of the state may eventually lead to discovery of oil and gas fields outside the former accepted limits. The Los Angeles basin and San Joaquin valley have been the favorite searching grounds, but so much drilling has been done in these areas that operators are willing to take leases in the wilder sections of the state.

One of the reasons for the extension of leasing activities to the more remote sections is the low price of large tracts and the ease of obtaining long leases. The most popular drilling sections of Southern California learned to demand too much of the operator, and he is beginning to browse around to sections which appreciate attention of the oil companies. The major companies are confining their activities to sections which definitely have some chances to produce, while some of the smaller local companies continue to pay little attention to formations.

Development of such structures as Long Beach, Kettleman Hills and Inglewood naturally came ahead of prospecting in the remote sections of the state. Elimination of most of the visible structures will force operators to drill areas which do not show outstanding promise from the surface. There was no rest until all visible structures along the Beverly Hills-Newport were drilled and redrilled. They are now definitely out of the way, so far as original development is concerned.

Outstanding Areas Tested

Most of the outstanding areas in the Los Angeles basin district have been tested. The high spots, usually indicative of promise, were drilled first. They yielded their full portion of new fields. The edge and fringe structures were drilled on the old theory that accumulations should exist near the base of the more recent deposits.

It has now come to the point in the Los Angeles basin where it will be necessary to make locations on a different quality of geology. With most of the surface "highs" definitely out of the way, a better line of reasoning will be required. Drilling will be limited because most of the most promising areas have been drilled. Deeper tests would have been more conclusive, however.

Discovery a few years ago of the Playa del Rey field showed the possibilities of the Los Angeles basin for future development. This field was found in a very flat district which showed no surface evidences of oil. This was an unusual discovery, and proved that it is not necessary to have a bunch of hills in the development of an oil field.

Sub-Surface Work Overlooked

Local geologists have long overlooked the value of sub-surface work. This has been entirely natural, since so much surface evidence has been offered in both the Los Angeles basin and San Joaquin Valley. As the number of visible structures has been reduced, it will be necessary to extend operations into districts which show little evidence from the surface.

The influence of core hole drilling is being felt, and preliminary prospecting along this line is becoming more popular. The flat country between Fresno and Coalinga, as well as more rugged districts in other parts of the state, offer a field for core drilling ahead of more expensive work.

The tendency to extend operations into the remote sections of the state would result in extensive wildcat operations, if a substantial oil or gas field could be found a good distance from the beaten path. The recent deposits are generally thinner toward the northern part of the state, but several localities could produce oil and gas from formations which are not radically different from those found in the southern part of the state.

Need of a stable natural gas supply will influence drilling in central California. The search for gas fields can bring new oil fields, but in most of the districts to be drilled, evidences of gas predominate. Small quantities of gas have been found in some of the remote sections where a limited amount of drilling is to be expected.

Kern County Leads Activity With Eight Tests Underway

Los Angeles, Calif.—Among the wildcats listed in Northern California, Kern County operations were attracting most attention, with eight tests underway or scheduled to start.

In the Devil's Den section of Kern County, Cumberland Oil Company's Cumberland 2, 17-26-18, was coring at 3268 feet. A. S. Halladay's Lincoln 1, 11-25-18, was drilling in shale at 715 feet. T. Hannah's No. 1, 25-25-18, was testing a water shut off with a total depth of 3455 feet. Pyramid Hills Oil Company's Gauthier 1, 24-25-18, will deepen from 2170 feet.

At Los Hills in Kern County, Associated Oil Company's Williamson 1, 2-26-20, is a location for a deep test.

At McKittrick, Ozena Oil Company's No. 2, 27-29-21, is plugging back from 3025 feet, and T. H. Purman's No. 1, 22-29-21, is drilling in shale at 5165 feet.

In the Semitropic area of Kern County, Milburn and Shirman's No. 1, 29-25-21, is a location.

Santa Barbara County

At Carpenteria Casitas Oil Company's Permit 202-2 was coring brown shalt at 3220 feet, reporting slight oil and gas showings.

At Coal Oil Point Bolsa Chica Oil Corporation's No. 191-1A, shut down at 4089 feet.

In Cuyama Valley Cabrien and Perkins' No. 1, 27-10-26, is a rig. Cuyama Valley Oil Corporation's No. 1, 12-10-27, is cleaning out at 2160 feet.

At Lompoc O. C. Field Gasoline Corporation's McLean 1, 6-7-33, will deep-

en from 3163 feet, after showing a small amount of oil and gas on the pump. Meganos Oil Company's Lee 1, 28-8-34, is a location.

On Santa Rosa Island Standard Oil Company of California's Island 1 is drilling hard gray sand at 5220 feet.

Ventura County

At Conejo, International Oil Developers' Powell 1, 33-2-20, is drilling in rock at 2300 feet.

At Fillmore, Sovereign Oil Company's Leavens 1, 23-4-19, is drilling in shale at 1178 feet.

In Hopper Canyon, Bardeen Petroleum Company's Lankershim 2B, 13-4-19, was reported producing on the pump at 2775 feet, while Commander Oil Company's Fennel 1, 13-4-19, was making a production test at 2100 feet.

In Ojai Livermore and Kennedy's No. 21, 33-4-23, was drilling in shale at 818 feet. A. N. Macrate's Kosmon 1, 27-4-23, was drilling surface sand at 200 feet.

Rincon area's lone test was Woodruff Petroleum Corporation's Woodrow 1, 4-3-24, drilling in shale at 5906 feet.

In San Miguelito district Chanslor-Canfield Midway Oil Company's Hobson A-3, 23-3-24, was a location, and Honolulu Consolidated Oil Company's Valenzuela 1, 23-3-24, was drilling in shale at 2600 feet.

At Santa Paula J. W. Mosher's No. 1, 22-4-21, was drilling in shale at 800 feet.

At Sespe H. A. Ivar's Star 7, 1-4-20, was drilling oil sand at 1710 feet. Merchants Petroleum Company's Cochran 6, 1-4-20, was drilling shale at 215 feet, and Topa Oil Company's No. 1, 33-5-19, was drilling shale at 1485 feet.

On Sulphur Mountain Wilshire Annex Oil Company's Thompson 1, 20-4-21, was drilling shale at 1222 feet.

In Timber Canyon Petro Well Producing Company's No. 4, 18-4-20, was drilling shale at 2335 feet.

Miscellaneous

In Kings County, Knudsen and Schmidt's Avenal 1, 36-23-17, will clean out and deepen from 5765 feet. Dudley Dome Oil Company's No. 1, 9-23-20, was drilling gray sand at 2528 feet.

In Fresno County J. F. Oliver's No. 1, 20-15-18, had spudded. Emerich Oil Company's No. 1, 35-13-13, was a location.

Merced County's sole operation, Harry Bergman's Oro Loma 1, 12-12-11, had spudded.

In Monterey County Western Gulf Oil Corporation's Johnston 1, 29-12-2, was drilling shale at 1300 feet.

In San Luis Obispo County Shell Oil Company's Mahoney 1, 4-25-12, was fishing for a core barrel at 4077 feet. Kent and McDonald's No. 1, 3-32-22, was drilling shale at 3800 feet.

Southern California

At El Monte Andrus and Hutcheson's Fee 1, 11-1-11, shut down at 1250 feet and may resume operations.

In Hasley Canyon W. A. Smith's Gilmore 1, 32-5-7, was milling at 3030 feet, with a total depth of 3212 feet.

At Hawthorne Williams Oil Company's No. 1, 23-3-14, was a location.

At Lynwood William L. Jones' Graham 1, 31-2-12, was changing drill pipe with a depth of 4420 feet, while L. F. Roberts' Specht 1, 29-2-12, was a location.

At Newhall W. L. Alexander's Alexander 1, 1-3-16, was rigging a rotary. W. T. Ball's Newhall 1, 34-3-16, was fishing for drill pipe at 3585 feet. Naval Reserve Oil Company's Trumble 1, 6-3-15, was cleaning out at 1250 feet.

At Playa del Rey, Cooperative Development Company's Mesmer 1, 26-2-15, was drilling in shale at 6660 feet. Del Rey Hills Oil Corporation's U. C. S. 1, 26-2-15, was rigging a rotary.

In San Fernando Willard Marble's Lake 1, 6-2-16, was fishing for drill pipe at 1600 feet.

At San Juan Capistrano Mineral Exploration Company's Echinique 1, 8-8-7, was drilling hard sand at 4232 feet.

At Wilmington Pacific Oil Investment Company's Lupie 1, 28-4-13, was a rig, and Wilmington Terminal Oil Company's Banning 1, 29-4-13, a location.

In San Bernardino County Great American Petroleum Company's Gapco 1, 18-2-8, was drilling shale at 758 feet.

California Permits Keeps Pace With 1931

Los Angeles.—If new permits granted to drill can be used as a yardstick, California field activity for 1932 is running neck and neck with 1931, for the total number of permits issued up to the week ending December 10 was 330, the same number as issued for the corresponding period of 1931.

Four permits were issued during the week, covering new operations in as many fields. In Buttonwillow, Milham Exploration Company was issued a permit for Sisson 1 in Section 6-28-23. At Long Beach, Hancock Oil Company was granted a permit for Signal 28 in Section 19-4-12. In Ojai, A. N. Macrate was granted permission to drill Rive Kosmon in Section 27-4-23, and at Ventura Avenue, Associated Oil Company gas granted a permit for Lloyd 132 in Section 27-3-23.

Rincon Ocean Test Finds Formations Running High

Ventura, Calif.—Coring of streaks of oil sand around 1800 feet in Indian Petroleum Company's State 82-2,* extension test in the ocean at Rincon, indicates that the well is higher on structure than other ocean wells, and considerably higher than the mainland producers. Geological work done on the ocean bottom showed a rising structure, but there has been some fear that the distance may be too great. The well is located about 1700 feet from nearest production and 2700 feet from shore. The location is on a state tideland permit and depth of the water is about 38 feet. The well is undoubtedly in line of production, but the chance that the location is outside the limits of the field has been appreciated by the company. The first streaks of oil sand were found about 250 feet higher than the depth of similar streaks in the nearest producers. A contour map of the field shows the well to be definitely higher on structure than neighboring ocean wells, but it will require actual drilling to determine this. Completion of a good well at this location would justify additional drilling on state tideland permits.

*See page 21.

Third Location Made for Richfield Northeast Sector

Los Angeles. — Further development of the northeast extension of the Richfield field has been announced by Forward Petroleum Corporation, location having been made for a third well on the company's 90-acre lease. Two wells have been completed, the first producer now pumping around 100 barrels per day, and the most recent completion flowing above 150 barrels per day. Gravity of the oil in this area is much higher than that produced in the main body of the field, testing above 32 degrees and showing a cut of less than two per cent. The well was unusual, in that it produced clean oil from the beginning, and was drilled to 3800 feet to establish a field record of 29 drilling days.

More Gas

The area is known as Reservoir Hill, and shows more gas and higher pressures than the level portion of the field. The lease was recommended to Forward Petroleum Corporation by D. A. Soderberg, who has been a Richfield producer for several years. Some production was developed in the immediate area a few years ago, but mechanical trouble checked operations.

Distribution of Work Keeps Many Californians on Roll

Los Angeles. — Distribution of field work in California has been a factor in furnishing employment to the largest possible number of men and women. The companies do not agree on the means of attaining the employment end, but an analysis of several work sheets do not show a great difference. Some of the companies are employing field forces five days per week; others are allowing only four days per week; while others are employing their field forces for two weeks and laying them off for two weeks. One company has divided the day into four six-four shifts. A man works six hours each 24. This would normally give a salary of 75 per cent of the former total; but the company takes half of the loss, and allows seven-eighths of the original wage. Distribution of the work has not added many men to the pay rolls, but it has prevented laying off a large number already employed. Drilling crews have been hit hardest by slack conditions.

Many companies have transferred their best drilling crews to less skilled work, but a tool pusher has been content to take anything he could get. Crowding back these skilled men has eliminated a large number of laborers and unskilled men. Most oil companies are using more men than absolutely necessary, due to a desire to hold forces until conditions improve.

California's Completions Well Distributed

Los Angeles.—Ventura Avenue was the only field in California listing more than one completion this week out of the state's six, which had an aggregate initial production of 1825 barrels, and with the exception of a 500-barrel well at Kettleman Hills, the two completions at Ventura Avenue were the largest recorded. Other fields contributing one well each to the week's column of new producers were Fruitvale, Kettleman Hills, Long Beach and Round Mountain.

A detailed list of California completions for the week follows: (Note the absence of wildcats from the list).

Company, Well and Location	Initial Production Bbls.	Depth
Fruitvale—		
Kern Pet. Corp., No. 1, 21-29-27	100	4182
Kettleman Hills—		
Kettleman North Dome Association, No. 47-2P, 2-22-17	500	7085
Long Beach—		
General Pet. Corp., K. H. 1	125	4800
Round Mountain—		
Golden Bear Oil Co., No. 4, 6-28-29	200	1675
Ventura Avenue—		
Associated Oil Co., Lloyd 131	500	7600
Shell Oil Co., Taylor 74	400	5477

Dominguez Well Makes 800 Barrels When Plugged Back

Los Angeles.—Republic Petroleum Company has succeeded in completing Childs 1, edge test in the Dominguez field, as an unexpectedly good producer. Initial production was around 800 barrels of clean oil from 4200-4370 feet, after plugging back from 6094 feet and perforating to test the regular producing zone. The production test around 6000 feet was a failure, but plugging back and testing by stages was more successful than expected. Shell Oil Company formerly owned this lease, but disposed of the tract on the theory that it was too far toward the east to produce consistently. Childs 1 is flowing and the pressures indicate a steady flow. The cut is less than two per cent, and gas volume is above the average for such an edge completion.

New Company Trying for Extension at Torrance

Los Angeles.—An effort to extend the Torrance field toward the east and south will be made by Wilmington Terminal Oil Company, a company recently organized by San Francisco and Los Angeles interests. The location is 1½ miles from the proven limits of the field, but only a short distance south of a well which produced some oil as an extension test. Most geologists agree that the Torrance structure is a great flat nose anticline which dips very gently toward the ends, and that extensions are to be expected. A few geologists contend that two or three highs exist, and that a good production should be found in Wilmington. The fact that the main part of the field is a comparatively low pressure area tends to substantiate the theory that the structure is somewhat flat and not very well defined. Development of commercial production a good distance east of the present accepted limits of the field is possible. Production is expected above 4000 feet. One well drilled north of the latest location produced some oil, but it was not large enough to attract major operators.

Kettleman Overproduction Tends to Slow Development

Coalinga, Calif.—The slight overproduction at Kettleman Hills and the resulting friction among operators probably will affect field work very little. The local squabble involves the amount of production, rather than the nature of offsets, and development will continue at a very conservative pace. New locations are expected to balance completions, but the high developed potential makes an extensive drilling campaign useless. The small number of operators, and cooperation between the two major producers will help to control field operations.

Completion by Kettleman North Dome Association of No. 47-2P with an initial production of 675 barrels of 66 gravity oil and around 30,000,000 cubic feet of gas gives the North Dome another producer in the upper portion of the Temblor formation. This well was drilled only to 7085 feet, and less than 1000 feet of the zone was opened. Use of the upper part of the Temblor is not objectionable where a greater gas supply is required. Requirements during the remainder of the winter will be much heavier than during the past six months.

North Kettleman Oil & Gas Company is drilling in a hard gray sand just above 9900 feet in Lillis-Welch 1, outpost test on the northwest flank of the North Dome. This well has established a depth record for the district, but the formation still gives some hope of deeper production. The test was drilled with the realization that the North Dome might not extend so far toward the northwest, and with the knowledge that the odds were against such an extension.

Associated Oil Company has made location for Whepley 4, the fourth well to be started on the 160-acre lease on the north flank of the North Dome. Three good producers have been completed on the southern part of the strip. The lease includes the east one fourth of Section 35-21-17, and is a strip one mile long by one fourth-mile wide. About half of the tract is of questionable value, but the southern portion has been a very consistent producer.

The Middle Dome remains a very questionable factor. Standard Oil Company is trying to clean out to bottom in No. 6-29V, but has removed the drill pipe and combination string in the 8406-foot hole only to 6382 feet.

Governor Murray Puts More Tax on Oklahoma City Oil

Oklahoma City.— Governor William H. Murray recently issued an executive order increasing assessment from one-half to one cent per barrel of oil produced to support military proration in the Oklahoma City pool. At the beginning of proration in that area operators were called upon to contribute to the proration fund. Some companies were carrying practically all of the burden while others were making no contribution. During the first few months after military proration was installed the assessment was a quarter-cent per barrel. Seeing a deficit from month to month the Governor raised it to one-half cent and during December and probably for several months to come a levy of one-cent per barrel will be made. An audit of the books of Colonel Cicero I. Murray is under way and a complete financial statement will be mailed at an early date to all producers in the field. Colonel Murray says that at no time has the assessment been sufficient to take care of all proration expense and that money has had to be borrowed to meet some of the bills. Under the executive order failure to pay the assessment by any operators may result in shutting down of wells of the delinquent operator.

During the week two pipe lines in the field were shut down either for failure to install meters or for the checking and repair of faulty meters. It has been testified in the proration hearing now in progress before the Oklahoma Corporation Commission that meters are being by-passed or tampered with and that many of the lines were not adequately equipped for accurate measurement of the fluid passing through them. Military proration forces are checking these rumors and in addition have installed a system of patrolling which they claim gives a regular and accurate check on field movements. Starting December 1, all stocks in field pipe line stations and at refineries were checked by the guardsmen, a practice which probably will be continued as long as conditions remain as they are. It is reported that three refineries in the Oklahoma City pool are shut down because they are unable to secure a sufficient supply of crude, or for other reasons not generally known. Those plants still in operation are said to be carrying minimum stocks.

Although official report of the military proration authorities has not been released it is understood that during November the field produced a total of 2,336,761 barrels, 131,461 barrels in excess of allowable for the month and 239,851 barrels in excess of pipe line movements from the field.. Field storage as of December 1 is expected to be up at least 225,000 barrels over the figure reported for November 1, making in excess of 1,000,000 barrels total stocks as of that date. Total stocks during the past few months have continued to increase due to inability of several producers to secure connections and to failure of purchasers to take their full nominations upon which proration allowables are based.

Seminole.— Phillane Oil Company's Garrett 1, CSE SE NW, Section 28-7n-4e, new well in the area between St. Louis and Pearson Switch, was shut down for repairs after averaging 1158 barrels daily for the first nine days of its 10-day potential gauge. Production is coming from Viola lime at 4075 to 4080 feet and Simpson dolomite at 4171 to 4175 feet. Early production reports have been corrected due to the discovery of error in tank strappings. No water has shown in the production. Hilton Phillips et al's Bettis 1-A, SEc

Oklahoma City Production Running Above Allowable

Oklahoma City.—During the first five days in December production in the Oklahoma City pool averaged 86,648 barrels, approximately 13,000 barrels daily in excess of allowable production under corporation commission orders. Daily gauges and the number of wells on production were as follows:

	Wells	Barrels
December 1	126	52,727
December 2	118	80,869
December 3	158	101,284
December 4	179	110,909
December 5	139	87,453
Total		433,242

The outstanding completion of the week was Indian Territory Illuminating Oil Company's A. Jarvis 1, CWL SW SE NW Section 26-11n-3w, in the southwestern portion of the pool. Gauge for the first two hours was 2399 barrels with gas at the rate of 35,000,000 cubic feet. Production is coming from Wilcox sand at 6500 to 6623 feet. An unusual feature regarding the well is the fact that it is less than 300 feet directly west of Wilcox-Lower Simpson contact and yet has more than 100 feet of sand, indicating a very fast southwest dip at this point of the structure. It is also within less than a quarter-mile of Phillips Petroleum Company and Shell Petroleum Corporation's Berg 1, NE NE SW Section 26-11n-3w, which practically missed the Wilcox and made only 115 barrels in four hours on gas lift. Top of the Wilcox in Berg 1 was 6553 feet and total depth 6595 feet in Lower Simpson.

Slick-Urschel Incorporated's Dodd 3, CEL SE SW SE Section 22-11n-3w, in the same portion of the pool but about a mile northwest, was reported to have made 2919 barrels of oil in four hours and gas at the rate of 76,000,000 cubic feet. Production is coming from 112 feet of Wilcox sand topped at 6495 feet.

Anderson-Kerr's Potts 1, CS½ SE SE NW Section 15-11n-3w, found Wilcox sand at 6408 to 6545 feet, from which depth it produced 1795 barrels in three hours and was estimated to be making 120,000,000 cubic feet of gas.

Ir the northern portion of the pool Phillips Petroleum Company's Rock Island 1, SW NW SW Section 35-12n-3w, flowed 1780 barrels in six hours and was making gas at the rate of only 5,000,000 cubic feet from Wilcox sand at 6239 to 6360 feet. Recent completions in the locality have resulted in huge gas wells which have caused no small amount of trouble with cutting out connections, leading to a general practice of setting casing below top of the Wilcox sand to shut off a portion of the gas. Indian Territory Illuminating Oil Company and Phillips Petroleum Company were waiting on cement to set on the six-inch casing which was set at 6274 feet in their M. K. & T. "B" 3, CN½ NE SE SE Section 34-12n-3w. Casing in this test is set 32 feet below top of the Wilcox sand to shut off the high initial gas yield.

SW Section 21-7n-4e, in same area, has been producing at the rate of 600 barrels daily flowing through 2½-inch tubing and pinched at the top. Its allowable has been set at 690 barrels daily. Wells in this area probably will be produced at a slow rate, or at least they should be since they are located between old pools where the reservoir energy or hydrostatic pressure has been dissipated through the withdrawal of large quantities.

West Seminole Pool

The Texas Company's Sandlin 5, NE NE SW Section 29-9n-6e, in the relatively new West Seminole pool, gauged 936 barrels in 23 hours on gas lift. Production is coming from Wilcox sand at 4127 to 4152 feet. It is now on a 10-day potential gauge and is showing as one of the smaller wells in the pool. On the most recent water report from the Seminole district, Amerada Petroleum Corporation's Chase lease with five wells, was shown to be water free; the same company's Morris lease, with one well was making 40 per cent water to total fluid allowed; Gypsy Oil Company's Pompey lease with two wells, was cutting two per cent; and the Texas' Sandlin with three wells, was making .27 per cent water to total fluid allowed. Here again is an arc which lies between old pools which have depleted reservoir energy and when water encroachment once gets a good start the pool probably will decline at a rapid rate.

Interesting Wildcat Tests in Oklahoma Passing As Threats

Tulsa.—Interest in present wildcat development in Oklahoma has been centered around three tests all of which now look none too promising and are gradually passing from the picture as discovery threats as they are reported running structurally low. Carter Oil Company et al's Shawbell 24, CSW NE Section 1-12n-4w, slightly over two miles from the Oklahoma City limits, had top of the Oswego lime at 6415 feet and cored from 6495 to 6505 feet, where it had a small showing of oil. It was reported drilling below 6525 feet and running more than 400 feet lower than at Oklahoma City.

Sovereign Oil Corporation et al's Flowers 1, SW SE SE Section 14-12n-3w, two miles west of Meeker in southern Lincoln County, apparently can now be written off as a dry hole since it found nothing in the Wilcox sand and is drilling in lower Simpson with no showings reported. Simpson dolomite was reported at 5533 feet and Wilcox sand from 5565 to 5605 feet. The basal 47 feet of sand cored dry.

Eason Oil Company, Ramsey Petroleum Corporation et al's Gun Club 1, NW NW NE Section 10-16n-4w, Logan County, directly south of the discovery well, was drilling below 5985 feet after finding water in the Layton sand from which the Cotcha well produces. It is being accorded but little chance of finding commercial production in the lower formations.

The only outlying area which now gives promise of immediate activity is that recently discovered by Wentz et al's Wolff 1, southwestern Noble County. Two tests in the area are drilling below 2600 feet.

In Pawnee County, Deep Rock et al's Crow 1, NE SE Section 26-23-5e, is still rigging up standard tools; O. M. Mainess' Schildberg 1, NW SW NW Section 27-22-6e, is building rig.

In Noble County, Lacy Rollins et al's F. Frank 1, SE SW Section 6-20-2w, is still a rig, while in the same county, Stanolind-Amerada's Kolb 1, C NE NW Section 33-20-2w, which a week ago was shown as drilling at 2712 feet, encountered the top of the Oread at 2905 feet and top of the Tonkawa Lime at 3495 feet. It is now drilling at 3651 feet.

In Creek County, O. O. Owens' Fee 1, NWc Section 23-15-7e, was underreaming 10-inch at 1688 feet, total depth 1740 feet.

In Beckham County, Pattee Royalty Company's Goose Tree 1, SW SE SW SE Section 32-10-23w, which a week ago was reported as shut down at 1210 feet, was drilling at 1655 feet.

In Washita County, McWhirter et al's Vanderneck 1, NE NW Section 3-7-19w, an old well drilling deeper from 1902 feet, was cleaning out at 1638 feet.

The Pottawatomie County wildcat of Payne Drilling Company, Lovelace 1, a rig on ground, has its location changed from NW SW NW Section 27-6-4e, to C SW SW NW same section.

In Pontotoc County, Blackwell Oil & Gas Company's Abbott 1, NW SW NE Section 14-4-6e, is rebuilding burned rig, total depth 1040 feet. Sunray Oil Company's Grant 1, in the same county, C SE NE Section 11-4-8e, was underreaming five-inch at 2915 feet.

In Coal County, Fink & Russell's Miller 1-A, an old well drilling deeper, SE NE Section 10-2n-8e, was shut down at 2750 feet; and Dodd & Burton's Grigsby 1-A, NW SE NE Section 35-1n-8e, was drilling at 1100 feet.

In Atoka County, Barton et al's Miller 4, SE NW SE SW Section 26-1n-14e, is still shut down at 505 feet; Hicks Oil Company's Morris 2, SE NE NW SE Section 5-1-15e, is completed for two barrels of 40 gravity oil from sand at 69 to 155 feet; the same company's Morris 2-A, SE NE NW SE Section 5-1-15e, is estimated at two barrels of oil from sand at 175 to 262 feet, total depth 267 feet; George's Reddin 1, in the same county, SW NE SW Section 19-1n-15e, is still shut down at 640 feet.

Wildcat tests in Southern Oklahoma continued fairly active. In Marshall County, Lee Cross' Hamlin 1, SE SW SW Section 26-6s-5e, encountered Arbuckle at 654 feet to 660 feet with a show of gas and water, and is drilling at 710 feet; Thomas et al's Setliff 1, SW SE SE SW Section 36-5s-6e, also in Marshall County, was drilling at 630 feet.

L. E. Stewart et al's test in Atoka County, Stewart 1, SE NE Section 2-4s-10e, was drilling in shale at 665 feet; and Brookshire et al's Guinn 1, in the same county NW Section 18-3s-10e, was shut down at 3368 feet.

In Stephens County, Gillette Brothers' Cooley 1-A, NW SE NW Section 17-2s-8w, was drilling at 1600 feet; and George Pace and others' Peck 1, NW SW Section 32-2s-6w, had a show of oil in sand at 1078 to 1081 feet and was drilling at 1643 feet.

Slack Demand Not Reflected In Oklahoma Completions

Tulsa, Okla.—Decreasing demand for oil from the major Oklahoma pools, rather than stiffling development in the older and shallower areas, seems to have given it an impetus. During the fiscal week 17 of the total of 25 completions were from the old shallow areas of eastern Oklahoma. While activity in flush areas has been on a rapid decline during recent months the trend has been in the opposite direction in eastern counties where wells can be drilled more cheaply and producers seem to have but little difficulty in securing connections.

A detailed report of the week's completions follows:

Company, Well and Location		Initial Production Bbls.	Depth
Atoka County—			
Barton, Miller 4, nw se sw 26-1-14e		*	505
Creek County—			
Gled Oil, R. Scott (Holmes) 2, swc ne 25-19-8e (owdd)	¶¼		2267
Hughes County—			
Mid-Continent Pet., L. Tiger 3, sce c ne 9-7-8e	¶8	455	2915
Radial Oil, Foster 1, nw sw sw 14-7-8e	¶6		1180

Company, Well and Location	Initial Production Bbls.	Depth
Southern et al, Shawnee 1-A, nw ne sw 14-7-8e	*	1142
Limestone O&G, Walker 4, se ne ne 15-7-8e ....(12 hrs.)	75	1243
Kay County—		
Crawford & Long, Richards 1, swc nw 4-25-1w	*	285
Lincoln County—		
Elm Oil, Strip 2, ne c sw 1-15-6e ¶8	260	3715
Oklahoma County—		
Clinckscales-Brown, Dennis 1, 560 feet from nl and 1046 feet from wl se 22-11-3w (4 hrs) ¶52	3633	6520
Okmulgee County—		
Hendricks, Leffard 1-A, cnw ne 17-13-12e ¶1½		2109
Mack Drilling, Moon 2, nw se sw 30-13-14e	*	1750
Taylor et al, Checote 1, se ne sw 20-15-13e	*	2070
Appleby et al, Anderson 1-A, nw se ne 3-15-14e	*	2090
Dodge Bros., Colbert 1-A, swc 11-15-14e (formerly reported se c)	5	866
Klingensmith, Farr 5, se ne nw 35-16-11e	40	1830
Osage County—		
Moore Estate & Ohio Osage, 1-A, swc se 27-21-9e	50	....
Pottawatomie County—		
Magnolia Pet., Billington 1, nwc sw 36-7-4e	350	4240
Tulsa County—		
Holmes Oil, Harrison 1, ne nw se 30-19-10e	10	2235
Bowder & George, Chisholm 2, cnl nw ne 5-17-14e	15	1540
Wagoner County—		
Kaufman, Johnson 1, sw se ne 22-18-15e	*	1052
Stansbury, Drew 1-A, cwl se ne 26-18-15e	10	1095
Boley, Bird 1-A, ne c 27-18-15e	*	1080
J. P. Flanagan, Lovett 1, ne se se 35-18-15e	*	1021

Seminole Potentials Show Increase Over November

Seminole, Okla.—Due to the granting of official proration potentials to the West Konawa pool and the Calvin sand area of East Earlsboro, total potential as of December 1 showed an increase of 15,508 barrels over that of the preceding month, when the figure was 316,753 barrels daily. During October of this year purchasers in the Seminole district fell 98,185 barrels below allowed pipe line runs, when total actual runs amounted to 3,988,790 barrels. Net allowed pipe line runs for December were set at 3,972,591 barrels, or an average of 128,148 barrels daily for the 24 pools comprising the district. Status of the district as of December 1 is shown in the accompanying tabulation.

Seminole District Potential and Allowed Runs

Pools	Oct. Allowed P/L Runs	Oct. Actual P/L Runs	December Potential	Dec. Net Allowed P/L Runs
Allen	245,153	244,978	17,794	236,726
West Asher	114,177	107,518	8,730	109,747
Bowlegs	328,573	328,826	25,177	320,099
Carr City	262,657	257,909	20,179	256,630
Earlsboro	340,522	341,756	23,498	330,034
East Earlsboro Calvin sand	12,204	16,721	9,672	10,075
East Earlsboro	246,685	236,130	17,716	221,236
South Earlsboro	78,010	69,905	4,552	57,613
East Earlsboro Extension	4,215	7,650	531	5,077
Earlsboro Townsite	47,598	43,741	2,876	40,169
Fish	71,743	67,917	34,740	81,326
Konawa	134,145	118,400	8,280	97,586
West Konawa	6,200	None	2,175	25,767
Little River	509,803	507,390	38,750	490,392
East Little River	49,064	41,289	2,956	42,351
Maud	32,719	27,814	1,558	28,644
Mission	198,387	194,934	14,667	184,844
Sasakwa	44,390	42,306	2,274	42,889
Searight	97,858	95,478	5,825	82,588
Seminole	313,267	315,004	23,256	307,819
East Seminole	32,866	29,826	2,076	27,437
West Seminole	219,764	223,089	20,938	262,797
St. Louis	500,776	479,088	35,262	510,957
Wewoka Townsite	65,348	60,270	4,216	63,977
Strippers	130,851	130,851	4,381	135,811
Total	4,086,975	3,988,790	332,261	3,972,591

Note: For comparison with November see page 39, November 7.

Thirty Three New Tests Scheduled for Oklahoma

Tulsa. — Scouts from 18 Oklahoma counties sent in first reports on 33 locations during the fiscal week compared with 21 for the preceding period. While wildcat activity is following largely the known trends a majority of the new work now being reported is from the older areas. Various fields of Creek and Okmulgee Counties lead the state in activity with the Wewoka-Holdenville area of Hughes County a close second. Conditions in the Seminole district are such that exploratory work may be expected to increase at an even greater rate than has been observed in recent months. The older pools of the district have developed a water condition which strongly indicates that they will be relegated to the class of settled production and that the time is not far off although those areas cannot be expected to pass out of the picture with a suddenness which will cause a wild scramble for new production. In the younger pools, such as Konawa, Wewoka Townsite, West Seminole, Wewoka-Holdenville, Wanette, and Fish, but little future activity can be expected, except in the Wewoka-Holdenville which is now probably at the height of its development.

In Carter County, Carter Oil Company's A. Hooks 1, NE SW NW 19-1s-2w, was reported as a rig.

First reports in Creek County were as follows: F. R. Billingslea's Warnoke 1-A (twin to No. 5) SE SW SW 15-15-8e; Smith and others' S. Fry 4, CSL NW SE 14-17-8e (owdd); Creokal Oil's Watashe 1, CSL SW NE 4-17-10e; Dot Oil's J. Smith 34, CEL SE NW 8-18-7e (owdd); J. E. Crosbie's Escoe 2, NW NE SW 26-18-8e; and Merritt et al's Pine 5, SE C NE 27-18-8e.

Lone Star Gas Company's two tests in Grady County, announced last week are corrected as follows: Mayo 1, NE NW SE 36-4-8w, formerly reported NWC SE, and Warren 1, CWL SW NW 36-4-8w, formerly reported as CSE NW.

Hughes County had one new location and two corrections: Buchner et al's Scott 1-A, SW NE NE 4-7-8e, a location; and Boettcher et al's Jacobs 1, NE SE SE 9-7-8e, first reported as No. 1, then changed to No. 2, is now corrected as No. 1; Boettcher Jacobs 2, SE C 9-7-8e, formerly reported as No. 2, then changed to No. 1, is now No. 2.

In Jefferson County, Bridwell, Barrett 1, SWC 19-6s-5w, was a location.

First report from Lincoln County was Pure Oil's Unglesbee 3, 663 feet from NL and 111 feet from EL of Lot 9, 1-15-6e.

In Muskogee County, J. L. Selby's

Brown 9, SE SW NW 35-15-15e, was drilling at 740 feet.

Oklahoma County had one correction in description and two wells reported as digging cellar: Southerland Production's Jones 1, 1255 feet from NL and 190 feet from WL SE 22-11-3w, was formerly reported as Capotuck's Jones 4; Phillips Petroleum Company's Stamper 2, 1174 feet from NL and 816 feet from EL SE 22-11-3w, and the same company's Wallace 2, 1123 feet from SL and 816 feet from EL SE 22-11-3w.

In Okmulgee County, R. B. Pine's Monday 2, 60 feet from CNW NW 6-12-14e, had rig on ground and Castleman's Thomas 8, SE NW SE 23-14-14e, was spudding.

New location in Osage County was Peters Petroleum and P. & R.'s 2, SE SW NE 24-24-7e.

In Pawnee County, first reports were: S. Martin's Cotton 10, SE C SW 6-20-8e (owdd), and E. O. Platter's Edminston 2, SE SW SW 30-21-9e.

A rather important test in Payne County is Stanolind and Amerada's Garby 1, NE NE SW 28-18-4e.

Location in Pittsburg County was J. T. Scott's James 1, CNE NE 28-2-15e.

In Pottawatomie County, the following were reported: Gypsy Oil's Boyer 1, NW SE SE 27-6-3e, Payne Drilling Company's Lovelace 1, SW SW NW 27-6-4e, and Stewart and Clark's Banta 1, SW SE SE 21-7-4e.

Announcements in Seminole County were: Gypsy Oil's T. Harjo 3, SW NE SW 20-6-6e (owdd); English & Troutelotte's Harjo 1, NE C SW 3-8-8e; and Deep Rock's Douglas 5, NWC SE 30-8-8e (owdd).

In Stephens County, the following first reports were made: Mudge Oil's Fisher 1, SE NE SW 13-2s-4w, drilling at 400 feet; McNeil & Newson's Pruitt 1, SE C NE 14-2s-5w, rigging up rotary tools; Clyde Becker No. 1 Bunch, NE NW SW 21-2s-7w, also rigging up rotary tools; and George Pace's Tony 1, SW NE NW 27-2s-7w, a rig.

In Tulsa County McEvoy's Squire 1-A, SE C SW 6-16-13e, was rigging up.

And in Wagoner County, Sands Petroleum's Hall 1, SW NW SW 24-18-15e, was drilling at 300 feet and J. E. Martin's Drew 4, SE NE SW 26-18-15e, was rigging up.

Siliceous Limestone Test Has 2000 Feet Oil in Hole

Wichita, Kansas. — Roy Ramsey et al's School Lot 1, NW SW NW Section 32-19s-9w, a small tract in the middle of a block owned by the Gypsy Oil Company, started swabbing December 5 with 2000 feet of oil in the hole. On the first test it swabbed dry recovering 60 barrels and refilling 900 feet in four hours. It was again swabbed dry with a recovery of 100 barrels and one hour later swabbed dry with a recovery of 8½ barrels. The hole was then deepened four feet to a total depth of 3285 feet, where it is said to have been helped. No reports had been made on new gauges. Production is coming from Arbuckle "Siliceous" limestone topped at 3245 feet and six-inch casing set at that depth. The plug was drilled to 3260 feet before swabbing operations were commenced. If the Ramsey test results in a commercial well Gypsy Oil Company may be forced to drill several offsets.

Western Barton County

Smith & Ash's Wilson 1, CNW SW Section 13-18s-14w, western Barton County wildcat test, is dry and abandoned at a total depth of 3576 feet after having a hole full of water in Arbuckle "Siliceous" lime at 3418 to 3424 feet.

Isern Area

Torry et al's No. 1, CNW SE SE Section 12-20s-11w, was plugging to abandon at a total depth of 3333 feet. Top of the Arbuckle "Siliceous lime was reported at 3293 feet and no showings were encountered. Charles Hilligos et al's Isern 1, SW SE NE, discovery well in the same section, was completed October 24, 1931 and given a potential of 1023 barrels from the lime at a total depth of 3328 feet. Two other tests in Section 12 have resulted in one dry hole and a small producer.

Eastern Reno County

Gled, Skelly Oil Company and Shell Petroleum Corporation's Franz 1-A, NE NE NW Section 2-24s-4w, in the area south of the Blake pool, went out of Mississippi lime at 3548 feet, topped the Hunton at 3625 feet and had a small show of oil and seven bailers of water per hour from 3632 to 3635 feet. Operators were underreaming eight-inch casing to set on bottom before deepening to Viola limestone. It is slightly over a quarter-mile east of Franz 1, CNW NW Section 2-24s-4w, which was completed September 1, 1932, making 110 barrels of oil and 165 barrels of water from the chat horizon at 3280 to 3495 feet.

Olson Oil Company et al have announced tentative location for No. 1, CSE NE Section 26-23s-4w, in the Blake area of eastern Reno County.

Ellsworth County

Gurley Brothers and Barnsdall Oil Corporation were drilling below 2975 feet with a hole full of water from 2930 feet in their Union Pacific 1, CNW NW SW Section 7-14s-7w, wildcat test one and one-half miles west of the town of Elkhorn in northern Ellsworth County. Eight-inch casing is set at 2844 feet, 14 feet below top of Kansas City-Lansing Group.

McPherson County Test Is Largest of Week

Wichita, Kansas. — Derby Oil Company's Hamm 1, in the new chat area of south McPherson County, featured reports of the fiscal week when it was rated at 2794 barrels initially at a total depth of 3472 feet. This area and the Hunton lime area of Harvey County may be expected to be well up in state activities during coming months since both now seem to be on separate structures of unknown extent. Seven completions reported a total initial of 7324 barrels of oil and eight million cubic feet of gas. Two additional reports came from dry holes in the eastern portion of the state.

A detailed report of Kansas completions for the week follows:

Company, Well and Location	Initial Production Bbls.	Depth
Butler County—		
Magnolia Petroleum, Kookler 27, swc se 30-26-5e (owdd)	*	2726
Chase County—		
Polhamus, Leedy 1, sw se sw 25-22-9e	100	2525
Cowley County—		
Murphy, Observatory Hill 1, cnl nw sw ne 27-32-4e	120	2412
Greenwood County—		
Young et al, Coffman 1, csl ne 10-24-12e	*	1847
Harvey County—		
W. C. McBride, Inc., Friesen 3, sw nw sw 20-22-3w	3500	3506
McPherson County—		
Gypsy Oil, Kinney 3, nw sw sw 34-20-3w (owdd)	271	3444
Stanolind-Amerada, Zerger 3, sw ne se 16-21-3w ¶8	720	3060
Derby Oil, B. Hamm 1, se c nw 33-21-3w	2794	3472
Sedgwick County—		
Gypsy Oil, Hamant 7, ne nw nw 14-26-2e	509	3156
Stafford County—		
W. E. Stringer, Swindler 1, swc ne 2-25-11w	spd. and abd.	

Reduced Potentials Dull Kansas Wildcat Activity

Wichita, Kansas.—Recent wildcat tests in Kansas have resulted in nothing but additional geologic information and although there are now a considerable number of scattered active tests there are none which demand close watching. With the large reductions reported in potentials of several of the newer western Kansas pools it is not unlikely that some operating companies will renew activities in wildcat areas. At present there is an excess of available production over expected future demand. However, this excess is much less than in other Mid-Continent states and a general pick up in consumption would soon result in an expansion of development. Trends of central western Kansas will be the first to be completely explored since they already have had considerable study and a large number of tests.

In Sumner County, Trees Oil & Shell's Springate 1, NE SE SW Section 6-34-2e, set five-inch at 3705 feet and was shut down at 3710 feet waiting on orders.

The Cowley County test of Rotn and Faurot, Craig 1, SE Section 2-32-3e, had a hole full of water in sand at 2080 feet, and was drilling at 2085 feet.

In Haskell County, Victor Martin et al's Weeks 1, C NW Section 8-28-31w, was an abandoned location.

Cameron & Great Basin's Landson 1, in Sedgwick County, C SE NW Section 13-28-2e, had siliceous at 3303 feet, a hole full of water at 3312 feet, and was drilling at 3330 feet.

In Butler County, Ramsey's Michael 1, SW NW NW Section 18-27-3e, had a hole full of water in Viola lime at 3175 feet, encountered the Wilcox at 3200 to 3215 feet and is shut down at 3215 feet.

One of the two new wildcats appearing on the list this week is the Reno County test of Skelly Oil Company, Cole 1, C SE NW Section 4-26-8w, a location.

In Finney County, Joe Denham's Brown 1, C SW Section 16-25-34w, set six-inch casing at 2500 feet and is rigging up standard tools.

The Woodson County test of Sheedy et al, Ryan 1, NE SW SW Section 32-24-14e, which first appeared on the list last week is drilling at 900 feet.

The location of Phillips Petroleum Company's Weibe 1, in Harvey County is corrected to read NE SE NE Section 30-23-2e, rather than NW SW NW, and the test now has its rig up.

In McPherson County, Holcomb & Trummer's Waltner 1, SW NE SE Section 19-20-2w, is still a location.

In Ness County, Sinclair Prairie Oil Company's Wilhelm 1, C SW SW Section 16-19-21w, was drilling at 1970 feet.

Ramsey et al's School Lot 1, in Rice County, NW SW NW Section 32-19-9e, was shut down at 3000 feet.

In Marion County, Vernon-United Petroleum's Schmidt 1, SW NW Section 35-19-1e, was shut down at 2755 feet; and Farrell et al's Williamson 1, C NW SE Section 21-19-4e, in the same county, was shut down at 1100 feet.

In Barton County, Smith, Ash et al's Wilson 1, C NW SW Section 13-18-14w, was drilling at 3513 feet; and Sinclair Prairie Oil & Gas Company's Turgeon 1, C NE NW Section 3-16-12e, was drilling at 800 feet.

Dieter et al's Fulton 1, in Saline County, SW NW Section 14-16-2w, remained a rig on ground.

In Ellsworth County, the other new wildcat location was Mid-Kansas Oil & Gas Company's Kanak 1, NE SW Section 15-16-7w, a location; Raymond Greer & Hannah's Kroboth 1, SE NW Section 12-15-10w, in the same county, was drilling at 2175 feet and preparing to run eight-inch casing; while Sinclair Prairie Oil Company's Malir 1, C NE NE Section 27-15-8w, was drilling at 265 feet; the remaining three Ellsworth County wildcats were as follows: Henry et al's Arensman 1, C SW SW Section 10-15-7w, a rig; Bickford's Burke 1, C NW SW Section 14-14-9w, spudded 50 feet and shut down; Gurley Brothers & Barnsdall's Union Pacific 1, NW SW Section 7-14-7w, set eight-inch at 2785 feet and was drilling at 2860 feet.

In Graham County, Schleimeyer et al's Smith 1, SE Section 24-8-25w, was cleaning out at 3615 feet after recementing eight-inch.

Twenty-Two New Operations Started in Nine Counties

Wichita, Kansas.—Reports from three eastern and six western Kansas counties show 22 new operations for the week. McPherson County led with 12, Reno was second with three, and one each were reported from Cowley, Ellis, Greenwood, Reno, Rice, and Woodson Counties. The new Harvey County Hunton lime and chat areas threaten to run close competition to McPherson County, which has led state development for more than two years. Six of the first reports from McPherson County are from old wells to be drilled deeper.

The Winfield Townsite pool which has been one of the consistently active areas in the Mid-Continent for the past year showed one new test this week, Deal Oil Company's Kemrick 1, NE C NW Section 27-32-4e, a rig.

In Ellis County, Phillips Petroleum Company's Bimmus 1, SWC Section 33-11-17w, was building rig.

A new wildcat test in Ellis County is announced this week, Mid-Kansas Oil & Gas Company's Kanak 1, NEC SW 15-16-7w.

Greenwood County has one new well, Central Petroleum's Cannon 1-A, SW NW NW 12-24-9e, a machine.

Harvey County has three new locations, Reaser-Lee's Wall 1, NWC SW 4-22-3w, McComb et al's Dyck 1, SW NE SW 8-22-3w, and Mid-Kansas Oil & Gas' Duerkson 2, SE SW NE 19-22-3w.

In McPherson County the following commencements are reported: Davis-Beardmore Ritz 3, NW NE SW 19-19-1w; Twin Drilling-Phillips' Grattan 3, SW SE SE 19-19-1w; Phillips Petroleum's Garrett 3, NW NE NE 30-19-1w; Lario Oil & Gas' Miller 3, SW SE SE 24-19-2w; Twin Drilling-Phillips Petroleum's Wiles 3, NW NE NE 25-19-2w; Stanolind-Amerada's Zerger 4, SW NW SE 16-21-3w; and six old wells drilling deeper: Darby Petroleum's Kaegi 1-B, SE SW NE 20-19-1w (owdd); McPherson Gas' Hill 2, CSW NE 10-19-2w (owdd); Carter Oil's Tinsley 1, NWC SE 6-20-1w (owdd); Gypsy Oil's Kinney 2, SWC 34-20-3w (owdd); Meylines et al, Regier 1, SE C SW 16-21-3w (owdd); and All States Petroleum's Neufeldt 1, SE SW NE 21-21-3w.

Reno County has a new wildcat location, Skelly Oil's Cole 1, CSE NW 4-26-8w.

New location in Rice County is Twin Drilling Company and Phillips Petroleum Company's Rice 3, SW SE NE 3-21-6w.

In Woodson County, Nye-Schaffer's Kilby 3, NE SE SW 31-23-14e, is announced.

Water Follows Pressure Decline In South End of East Texas

Tyler, Texas.—Encroachment of salt water across the south end of the East Texas oil field is following closely behind the somewhat rapid decline in reservoir pressure sustained in recent weeks. Isolation of the area from the main part of the field has not permitted usual equalization of reservoir pressure, and the heavy withdrawal of natural gas from a group of wells situated immediately south of the oil zone is believed to have some bearing on conditions. Unless the present rate of pressure decline is checked through a general reduction in production slated for the field it is quite probable that the south end of the structure will create a greater market for pumping equipment than any other section of the structure.

A pair of wells on the extreme south end of the W. H. Siler tract, Mary Walker Survey, are now showing salt water. Stanolind Oil & Gas Company and Pure Oil Company's Siler 3, located in the northerly southwest corner of the survey, is showing three per cent water while restricted to 37 barrels daily, and Siler 37, a few locations to the east is making 10 per cent, having a sub-sea depth of 3317 feet. Stanolind Oil & Gas Company's J. W. Ashby 1, an east offset to the latter, is preparing to pump after swabbing small volume of oil with water, failing to get a shut off when the hole was plugged back from 3809 to 3659 feet.

Mid-Kansas Oil & Gas Company's Kangerga 5, Acct. 1, a south offset to the southwest corner of the W. J. Roane Survey, and near west edge of production, halted at 3670 feet rather than risk bottom hole water, and is preparing to pump. This company's Graham 3, a gasser in southeast part of the Peter Tipps Survey, is credited with showing salt water with production. Chas. L. McMahon et al's Joe Lee 1, Peter Tipps Survey, has been ordered plugged at 3674 feet, and Big Indian Oil & Development Company's Lee 1, an offset to the latter, flowed 40 barrels oil at 3644 feet, and quit. It will be deepened.

Marr Drilling Company's John Rettig 2, located on the north end of the J. A. Sparks Survey and south of the field, tested salt water in sand at 3705-11 feet, with a surface elevation of 368 feet, and has been plugged. The first test on the Rettig tract, but to the east was also a failure.

Sand penetration of two feet taken by Sinclair Prairie Oil Company's Amanda Wiley 9, situated near west edge of field in Smith County, failed to yield flowing production, and the well has been completed at 3798 feet rather than risk bottom hole water with a swabbing gauge of 40 barrels oil in 2½ hours. On the opposite side of the Joiner section of the field, Walter H. Gant and Garvin's Jerry Simmons 1, M. V. Pena Survey, flowed 30 barrels oil by heads in nine hours from broken sand at 3522-3636 feet. Hunt Production Company's regular addition to the list of pumpers each week was R. J. Vinson 5-A, J. Darley Survey, an east side location, testing 20 barrels hourly from broken sand at 3626-3706 feet.

A shot of 20 quarts given Sun Oil Company's T. G. Pressley 2, located in north Gregg County in the M. Alexander Survey and on the east side of the structure, resulted in the recovery of 25 barrels of fluid the first day. This test encountered very little oil saturation in broken sand at 3638-63 feet. It will probably make a pumper. T. D. Humphrey of Tyler and associates' F. P. Branson 2, located in the northwest part of the D. Meredith Survey, Gregg County, and near several recent dry holes, fared better in making an initial of 100 barrels oil per hour via open tubing from sand at 3624-31 feet.

Mid-Kansas Oil & Gas Company heads the list as the most active unit in the field, with 30 derricks and rigs and five drilling, but will materally speed up its drilling. This company maps out its development program in advance, and has erected steel derricks while favored with good weather on scheduled locations so as to avoid the handicap of bad roads during the rainy season. All derricks are new, and remain standing after the completion of a well so as to be prepared to pump on short notice. It has 249 completed wells for an average well density of 18.03 acres per well, or the third lowest density among the larger lease owners. Simms Oil Company et al, with an accredited productive acreage of 1165 acres, has drilled an average of one well to 20.79 acres to head the list, while American Liberty Oil Company has one well to 19.94 acres. The 25 largest lease owners in the field, representing 70.2 per cent of the acreage, have drilled an average of one well to 14.72 acres, while the remainder of the operators, probably 950 separate companies and individual units, with 28.8 per cent of the 113,904 productive acres have drilled one well to 9.23 acres, according to a survey by scouts. The average for the field is one well to 12½ acres.

Humble Oil & Refining Company, owner of about 12.86 per cent of the productive acreage, is the most active operator, having 20 rotary rigs at work, and 14 additional operations listed. This company has 883 completed wells, and has drilled an average of one well to 16½ acres. Shell Petroleum Corporation is the second most active unit, and has 17 operations underway, including 11 drilling; four derricks and rigs; and two locations. This concern has 310 completed wells for a density of one well to 14.28 acres.

EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
Joiner Area—		
Ajo Oil Corp., Joe Lee (25-ac) 2-B	9500	3765
Amalgamated Oil Co., S. S. Cook (35-ac) 6	9600	3721
American Liberty Oil Co., E. L. Pinkston (84-ac) 3-C	5500	3682
P. D. Bowlon et al, N. L. Marwill 1	5000	3693
H. C. Culp et al, S. Clay (5-ac) 2	2500	3678
Walter H. Gant & Garvin, Jerry Simmons (52.5 ac) 1	150	3636
Gulf Prod. Co., Walter Shaw (36.58-ac) 3	9600	3737
Humble O&R Co., R. A. Barksdale (119-ac) 1-B	7500	3722
E. S. Holt (30-ac) 3	6000	3786
Kangerga (330-ac) 22-A	8600	3675
M. A. Neal (64-ac) 1	720	3752
S. A. Plowman (228-ac) 15-A	9500	3658
Walter Shaw (73-ac) 5	9600	3710
Jessie White (43-ac) 3	8000	3743
Hunt Prod. Co., R. J. Vinson (59-ac) 5-A	500	3706
Sherman Hunt et al, R. J. Vinson (21.7-ac) 2-B	1000	3710
C. H. Lyons et al, W. P. Moore-Arkansas (40-ac) 2	1200	3598

Company, Well and Location	Initial Production Bbls.	Depth
Alex U. McCutchin et al, Jesse Cole (1¼-ac) 1	11,000	3785
Mid-Kansas O&G Co., M. M. Cross (814-ac) 47	7500	3626
M. C. DeGuerin 9	9000	3656
Peter Tipps (22-ac) 3	8400	3663
Sinclair Prairie Oil Co., Amanda Wiley (312-ac) 9	600	3798
Dora Wright (162-ac) 12	10,500	3731
The Texas Co., May Blackwell (100-ac) 7	4500	3716
Allen Kersh (211-ac) 11	8000	3631
Tidal Oil Co., O. Whittington (39-ac) 3	750	3632
O. Whittington (39-ac) 4	1200	3680
Kilgore Area—		
Blue Star Oil Co. (now Sinabar Oil Co.) River 6-E, Tract No. 6	9100	3545
Sabine River 6-F, Tract No. 6	9500	3545
Sabine River 6-L, Tract No. 6	10,000	3550
Sabine River 7-B, Tract No. 7	10,500	3503
P. T. Bond, Rec., Newman et al Protho (8-ac) 2	9000	3670
E. L. Chapman (Dave Donoghue, Rec.), Futch-Cooper (62-ac) 3	9000	3686
Gulf Prod. Co., A. Nichols (52-ac) 6	7000	3632
J. W. Harreld, Rec., C. C. Julian O&R Co., England (32-ac) 4	3000	3621
Humble O&R Co., B. F. Laird (162-ac) 7-A	12,000	3598
S. S. Laird (568-ac) 21-B	7000	3634
S. S. Laird (568-ac) 24-B	6200	3628
Jones-O'Brien, Inc., J. Protho (8½-ac) 2	11,000	3670
J. W. Luttes & Langley, Register 1	9500	3689
Lucey Pet. Co., Gill 2	4500	3740
Magnolia Pet. Co., Sam Carr 5	10,000	3438
C. C. Still (100-ac) 7	11,500	3697
Viola Wells (18-ac) 1	10,000	3575
Chas. L. McMahon et al, D. Wills 3	9600	3618
Mullendore & Berry, G. Davis (10-ac) 2	8800	3590
E. J. Raddatz & L. L. Travis, Sabine River 6, Tr. No. 8	7500	3470
Republic Prod. Co., H. P. Leverett (109-ac) 5	13,000	3668
Rhoads Drlg. Co., Sabine River 7, Tr. No. 5	8500	3530
Sabine River 2, Tr. No. 7	8400	3458
Shell Pet. Corp., W. W. Elder (196-ac) 15	11,000	3590
John Douglas (91-ac) 8-A	9800	3613
B. F. Laird (211-ac) 12-A	9000	3569
J. S. Elder (73-ac) 6-B	8600	3568
J. B. Watson (285-ac) 23.	10,000	3649
J. B. Watson (285-ac) 25.	12,000	3662
J. B. Watson (285-ac) 26.	9500	3608
N. Jobe et al (60-ac) 7	9000	3551
Sinclair Prairie Oil Co., A. A. King (91-ac) 4-B, Tr. No. 3	7000	3475
A. A. King (91-ac) 5-B, Tr. No. 3	11,000	3462
A. M. Snyder & Ashton, H. Adkins (1-ac) 1	9200	3648
Stanolind O&G Co., R. Christian (86.56-ac) 5	7200	3690
Steen Drlg. Co., W. D. Lacy-Shell (163-ac) 5	12,000	3614
G. W. Swilley-Delta Drlg. Co., L. D. Crim (19-ac) 1	2400	3580
The Texas Co., H. T. Elder (86-ac) 9	10,500	3670
Tidal Oil Co., E. R. D. Bivins (200-ac) 17	11,000	3640
Wolfe & Bradley, M. T. Cole (33-ac) 3	8600	3546
Longview Area—		
Alma Pet. Corp., J. B. Watson (35-ac) 3	14,000	3681
Atlantic Oil Prod. Co., E. Burnside (204-ac) 19-A	10,500	3552
E. Burnside (204-ac) 20-A	10,000	3549
J. M. Moore (456-ac) 35	9600	3536
J. M. Moore (456-ac) 37.	10,500	3537
J. M. Moore (456-ac) 38	9000	3540
Barnsdall Oil Co., M. Adams (102½-ac) 9	13,000	3650
M. G. Blalock & Bros., State (97/100-ac) 2	13,500	3480
East Texas Oil Ref. Co., P. C. Castleberry (40-ac) 5.	11,000	3610
Everitt Oil Co., A. J. Sanders (88-ac) 4	10,000	3658
Foundation Oil Co., L. Wills (13-ac) 2	10,500	3659
Groneman & Doran, State (1.01-ac) 2	10,000	3465
Gulf Prod. Co., J. C. Judge (1036-ac) 29	10,400	3549
A. R. Hancock et al, E. H. Brawley (4.6-ac) 2	14,000	3514
Humble O&R Co., J. F. Boles (100-ac) 8	9500	3638
J. M. McFarland (57½-ac) 5	13,000	3580
A. O. Phillips 5	2000	3703
T. D. Humphrey et al, F. P. Branson (24-ac) 2	8400	3631
Lee Bros. et al, Sam Key 1	10,500	3676
Magnolia Pet. Co., Jim Allen (38-ac) 4	11,000	3657
E. H. Brawley (80-ac) 9.	10,500	3520
E. H. Brawley (80-ac) 12	9200	3511
W. E. Jones (99.92-ac) 10.	9500	3669
O. F. Smith (97-ac) 8	13,000	3602
Todd-Stinchcomb (111-ac) 8	10,000	3511
Refugio Oil Corp.-J. Z. Werby, B. H. Read-Shell (196-ac) 1	9500	3609
Shell Pet. Corp., J. W. Akin (100-ac) 7	12,000	3610
A. N. & V. King (160-ac) 10	10,000	3612
A. N. & V. King (160-ac) 11	9500	3625
C. C. Landers (207-ac) 13.	4500	3694
Stanolind O&G Co.-Simms Oil Co., Flewellen (374-ac) 23-B	6700	3662
Stanolind-Simms-Peach Blossom Oil Co., J. W. Akin (80-ac) 5	10,000	3629
Mary L. Stephens-Paul Dalton, Hargraves 1	4000	3767
Sun Oil Co., W. L. Fuller (50-ac) 3	5000	3691
John Hargraves (200-ac) 11	3400	3753
Superior Oil Co. (Cal.), H. Pritchard (100-ac) 9-A	13,500	3558
The Texas Co., H. L. Phillips (136-ac) 5	7800	3635
Yount-Lee Oil Co., Mary McKinley (22.3-ac) 3	11,000	3568

Refiner Notifies Owners to Take Oil or Accept Price

Dallas, Texas.—East Texas Oil Refining Company, owner of two refineries in the East Texas field, notified producers by registered mail December 7 to remove their oil, aggregating nearly 150,000 barrels, from the company's tanks within five days from date of receipt of notice, else accept a price for same to be fixed at the discretion of the company. Due to a fire at the company's Longview Junction plant on last September 17 the purchase of outside crude and royalty oil was suspended for 30 days, but regular pipe line runs were maintained during this period, with the oil going to storage without charge.

An offer of 60 cents per barrel is reported to have been made by the East Texas Oil Refining Company to owners of the stored oil.

An opportunity has been tendered the oil owners to participate in supplying a cargo of crude that the company expects to book for shipment from a Gulf Coast port shortly.

Longview, Texas.—Blue Star Oil Company, owner of drilling rights to tracts No. 3, 6 and 7 of the Sabine River in the East Texas oil field, is reported to have turned alternate well sites on the above tracts to Sinabar Oil Company, a recently formed company with a Delaware charter. The former has completed 23 river bed wells, and is in the midst of a sizeable development program.

Believe Leon County Test Will Make Commercial Well

Tyler, Dec. 9.—Recovery of 11 feet of additional sand showing oil from the Leon County wildcat test of Shell Petroleum Corporation, Penn Oil Company, J. R. Black et al on the Phillips land has satisfied the owners that this penteration of the Woodbine horizon to a depth of 6157 feet will afford a commercial producer. The rotary crew were running liner and 2½-inch tubing to complete over the week-end. A successful completion will open up a new production trend for the Woodbine sand belt on the south end and considerable speculation has begun as to whether this promising area is of the shore line type as the East Texas field or a closed structure. About 26 feet of oil and gas saturated sand and broken sand has been drilled by Phillips 1 which is located about seven miles northwest of Centerville on what is known as the Buffalo structure. The first pay zone consisting of 14 feet of saturated Woodbine was topped 6054 feet and was followed by 77 feet of hard shale with occasional streaks of mostly dry sand. A second cap rock at 6145 to 6146 feet marked the entry of the core barrel into the lower sand which was penetrated 11 feet, making a total depth of 6157 feet for the hole. The last core was so soft that recovery was impossible. A drill stem test given Parriott and Hanlon's wildcat test on the Harvey Stuart land, Wood County, at 4560-85 feet proved dry and the hole has been ordered deepened. It is supposedly in the Woodbine series.

Fairly good assurance that an oil producer was in prospect for this core drilled structure in north central Leon County was attained about November 20 when 14 feet of sand and broken sand was cored immediately below a cap rock at 6054 feet, with hard shale at 6068-6087 feet. Operations were then halted to cement a string of seven-inch pipe at 6039 feet. Since the hard body of shale underlying the first saturated sand afforded insurance in making a successful water shutoff in the event deeper drilling should yield water, the well owners elected to deepen in search of more sand before making a production test.

Since the Leon County deep test is situated near the center of a 17,500-acre block of leases it lessens the possibilities of a major development program getting under way in the event prolific wells are possible. The block is not solid, as Hubbard and Son, Dallas operators, have leases fairly close to the pioneer test, and other tracts are in the hands of non-participants in the original project. Shell Petroleum Corporation owns 50 per cent interest in Phillips 1, while the remainder is scattered among seven other companies and individuals. Phillips 1 is located 1325 feet from the southeast corner of 164-acre tract, E. A. Swayze Survey. It logged Pecan chalk at 4135-4181 feet, and Austin chalk at 4841-5570 feet, with a surface elevation of 423 feet.

The old oaken bucket is missing from the Prince well, but there's H. M. Prince, contractor, the fine Springer spaniel belonging to Alford Grey, geologist with Atlantic Oil Producing Company, who's seated in the middle, and Burton Prince at right. Willow Springs, East Texas, is the setting.

Second Reprint of East Texas Bulletin Ordered

Dallas, Texas.—A second edition of a bulletin issued early this year on the East Texas oil field by the Dallas Petroleum Geologists, an organization composed of leading local geologists, has been ordered printed as result of continued demand for copies, according to Sam Aronson, editor. This flexible bound bulletin, containing 34 pages and nine charts, is a transcript of discussions made on geologic conditions and factors affecting production in the East Texas field at a Tyler meeting of members of the above organization and the East Texas Geological Society. Copies of the bulletin are obtainable for $1.00 each from the Dallas body at 306 Magnolia building.

Arp Refining Company Buys Skimming Plant

Tyler, Texas.—Boone Refining Company's 1000-barrel capacity crude skimming plant near Arp and on the southwest edge of the East Texas oil field, has been sold to Arp Refining Company, and all well connections held by the former were terminated December 1. L. F. Boone, formerly of Breckenridge and principal owner of the Arp plant, which was the first of the make-shift type to be built in the field, has announced that he has bought a farm, and will retire to it. Arp Refining Company is controlled by M. C. Bray, F. W. Fischer and Chas. A. Weathered.

Shreveport Outfit Erects Tank on Joiner Lease

Tyler, Texas.—Haynes Drilling Company, Shreveport, Louisiana, has erected an 80,000-barrel steel tank on its J. T. Brown 40-acre lease in the Joiner section of the East Texas field in order to be protected against any adverse developments. The company also has production on the Clark Lee and E. E. Thrash tracts. An adjoining lease owner to one of the above tracts is an alleged chronic violator of proration in spite of the watchful efforts of the commission's enforcement staff.

Two East Texas Wildcat Completions Are Failures

Tyler, Texas.—Two East Texas wildcats, both failures, were recorded among the week's completions for that area.

In Kauffman County, T. L. Wynne et al abandoned J. A. Nash 1 at 2508 feet.

In Upshur County, Cranfill-Reynolds Company et al abandoned Berry Brothers 1 at 3792 feet.

In Anderson County, Barclay et al's J. C. Beard 1, J. Trimmer Survey, has spudded.

In Bowie County, Roy E. Anderson et al's A. Y. Breckenridge (464-ac) 1, M. Dykes Survey, with an elevation of 352 feet and Pecan chalk at 1362-1805 feet, tested salt water and shut down at 2835 feet. Tom Bell-W. J. Dobbs & Fred S. O'Neill's Mrs. T. M. Moss (465-ac) 1, O. D. Watson Survey, is a rig. Ajo Oil Corporation et al's Nichols-Daniels (167-ac) 1, Hugh B. Shaw Survey, is a location. W. S. Langford et al's W. W. Whybark (100-ac) 1, J. H. Dyer Survey, elevation 377 feet, is shut down at 2250 feet.

In Cherokee County, Barclay-Taite & Deason's A. T. O'Neal (13-ac) 1, J. M. Procella Survey, is a derrick. Loring Oil Company's F. M. Swearingen 1, Oliver Lund Survey, with the top of the Midway at 2490 feet, elevation 370 feet, top Pecan chalk at 3592 or 3680 feet, is fishing for drill stem at 4135 feet. Elliott and Sikes and Wilson-Stubbs Oil Corporation's M. F. Ragsdale (53-ac) 1, J. P. Wolfin Survey, elevation 520 feet, is shut down at 3600 feet.

In Franklin County, Franco Oil Company (J. F. Mills-L. S. Harper-A. P. McGee) et al's L. S. Harper (118-ac) 1, W. N. Dawson Survey, elevation 356 feet, top of the Pecan chalk at 1320 feet, is drilling out the cement plug at 3404 feet.

In Freestone County, Clyde Creighton & Company's W. A. Holley (80-ac) 1, A. B. & M. Survey A-61, with the top of Pecan chalk at 3105 feet is shut down at 3670 feet.

In Henderson County, McCormick and B. L. Green et al's M. H. Gossett (103-ac) 1, L. D. Stover Survey A-87, elevation 341 feet, top Taylor marl 1450 feet, top Austin chalk 2347 feet, top Woodbine sand 3267 feet, is shut down, in litigation, total depth 3328 feet. W. F. Bridwell et al's C. T. Jackson (25-ac) 1, J. Levins Survey, is a location. H. H. Myers et al's M. E. Olson (80-ac) 1, George Wilson Survey, elevation 512 feet, Pecan chalk 3070-3245 feet, cemented casing on sand at 3711-21 feet. Superior Oil Company's Cole & Faulk 1, H. Z. Farmer Survey, is drilling at 2900 feet.

In Hopkins County, Burgess and Simpson's Mt. Vernon National Bank 1, M. E. & P. Ry. Survey, elevation 385 feet, is shut down at 1395 feet. E. B. Corley et al's J. D. Jumper 1, James Webb Survey, is drilling at 785 feet. Y. E. Hildreth et al's Cole 1, Berry Merchant Survey, elevation 518 feet, Pecan chalk 2174-2375 feet, is drilling at 3825 feet.

In Kaufman County, Milhoan Drilling Company and Paul L. Meaders et al's T. C. Coleman (259-ac) 1, W. G. Gibbard Survey, Austin chalk 2460-2938 feet, is shut down at 3273 feet. T. L. Winn et al's J. A. Nash 1, J. Trevino Survey, Austin chalk 1285-1803 feet, was abandoned at 2508 feet. J. M. Scott and Stanley Darrell et al's S. Pannell (649-ac) 1, A. Cherino Survey, is shut down in hard sand at 2407 feet.

In Leon County, Leon County Oil Company's John Morris (200-ac) 1-A, A. F. McWhorter Survey, is shut down at 2540 feet. Shell Petroleum Corporation-J. R. Black-Penn Oil Company et al's Wm. Phillips (160-ac) 1, E. A. Swayze Survey, elevation 423 feet, Pecan chalk 4135-4181 feet, Austin chalk 4841-5570 feet, has an oil and gas showing in Woodbine sand at 6054-6068 feet, and is coring shale at 6144 feet.

In Limestone County, C. M. Joiner Petroleum Corporation and Miller Drilling Company's W. Stephenson (54-ac) 1, George Gentry Survey, top Austin chalk 3050 feet, is shut down at 3140 feet.

In Morris County, Buchanan-Burkhalter and J. K. Wadley et al's Staggers (65-ac) 1, Forbes & Nelson Survey, elevation 370 feet, hard Pecan chalk 2526-3020 feet, Austin chalk 3483-3506 feet, has a swab lost in the hole and is shut down at 3692 feet. Grover Hart et al's Walcott-Lott (577-ac) 1, D. A. Russell Survey, is shut down at 1390 feet.

In Red River County, Concord Oil Company's J. R. Dellahunty 1, I. Moore Survey, is drilling at 2745 feet. L. G. Priest et al's R. W. Peek (220-ac) 1, Abram Wagley Survey, has spudded and shut down.

In Rusk County, John Keegans et al's R. L. Needham 1, J. H. Chambers Survey, is shut down at 1415 feet. Bodine et al's G. W. Hooper (50-ac) 1, Juana C. de la Vina Survey, elevation 439 feet, Pecan chalk 2620-2946 feet, is drilling at 3415 feet. George F. Hudson et al's Jeff H. Phillips (148-ac) 1, N. Vilareal Survey, is drilling at 1430 feet. Butler & Clark's Tipps 1, H. W. Smith Survey, top Pecan chalk 2440 feet, is drilling at 2720 feet.

In Smith County, Mundt & Mount et al's Murray (65-ac) 1, Marshall University Survey, elevation 579 feet, Navarro 2858-79 feet, Pecan chalk 3496-4000 feet, base Austin chalk 4608 feet, is coring at 4775 feet.

In Upshur County, Cranfill-Reynolds Company et al's Berry Brothers (412-ac) 1, J. P. Hutchinson Survey, elevation 333 feet, Pecan chalk 2442-2890 feet, Austin chalk 3694-3724 feet, is dry and abandoned in salt water sand at 3753-92 feet. Frank Buttram et al's D. F. Smith 1, C. H. Cooper Survey, is a rig; Smith 2, a location. F. W. Maddox et al's D. A. Fleet (1-ac) 1, C. H. Cooper Survey, elevation 336 feet, top of broken Pecan chalk 2370 feet, hard chalk 2430 feet, tested salt water at 3682 feet and plugged back to 3673 feet. Newsom & Orr's (was B. L. Watson's) D. F. Smith 1, J. R. Davis Survey, is shut down at 1855 feet. Tucker and Van Fleck and Solar Exploration Company's S. J. Mangham (564-ac) 1, J. J. Hooper Survey, is shut down in shale at 3828 feet. J. K. Wadley, J. P. Evans and C. Lyons' W. S. Jones (100-ac) 1, James M. Dunn Survey, elevation 263 feet, top broken Pecan chalk 2333 feet, hard chalk 2402-2977 feet, top Austin chalk 3557 feet, cored water sand at 3680-81 feet, and shut down in oil sand at 3692-3701 feet; Chatham (14-ac) 1, McKee Survey, is a rig.

In Van Zandt County, Gardner Brothers and Roy C. Ling's J. Leonard (53½-ac) 1, P. Mason Survey, elevation 511 feet, top Woodbine sand 4240 feet, top lower Cretaceous 4927 feet, top Georgetown lime 4950 feet, is fishing at 1500 feet for drill pipe, total depth 5760 feet.

In Wood County, DeGenther and F. H. Zeigen et al's M. L. McClain (66-ac) 1, Sam Brooks Survey, elevation 455 feet, Pecan chalk 2553-2740 feet, is shut down at 3850 feet. Hudson, Shelton and Talko Petroleum Corporation's C. S. Ross (86-ac) 1, F. L. Smith Survey, elevation 359 feet, top Pecan chalk 2892 feet, is shut down at 3840 feet. Hull and Sharp (was W. B. Saulsbury's) et al's T. H. Peterson (320-ac) 1, W. B. McNutt Survey, Abstract 418, is drilling at 2255 feet. F. B. Parriott and J. S. Hanlon's J. H. Harvey (was Stuart) (1964-ac) 1, M. H. Ussery Survey, elevation 604 feet, Pecan chalk 2984-3165 feet, Austin chalk 4128-4560 feet, is drilling at 4585 feet. D. Replogle and Sinclair Prairie Oil Company's John C. Saner 1, Block 19, James M. Candler Survey, elevation 562 feet, Pecan chalk 3069-3270 feet, Vaginulina zone 3744-54 feet, Gober tongue of Austin chalk 3980-4000 feet, top Austin 4240 feet, is drilling at 4380 feet. Wood County Oil & Gas Company's Guy Davis 1, John R. Clute Survey, is drilling in chalk at 4165 feet.

Cores Indicate Crockett Ordovician Well Producer; Know in 10 Days

San Angelo, Texas.—Sufficient oil and gas saturated cores from the Ordovician lime horizon have been recovered from the Crockett County deep wildcat test of Stanolind Oil & Gas Company and other unit members on the J. S. Todd ranch to assure a producer at its present depth of 7357 feet. This wildcat was deepened from 7200 feet during the past week. The entire section of the Ordovician series, topped at 7006 feet, has been cored, and the dolomite lime formation near the 7275-foot level was too porous to make a complete recovery of the core. Operations have been temporarily halted at 7357 feet to cement a string of seven-inch pipe at 7180 feet. Landing of pipe is expected to be completed over the weekend, and about 10 days will elapse before a production test is given the well.

Ten companies, contributors of acreage to form the 4,000-acre unit block bearing this promising wildcat, have been advised by the operating company that the base of the Pennsylvania black shale was logged at 6994 feet, with a surface elevation of 2660 feet. The Mississippi lime followed at 6994-7006 feet, then the Simpson formation (top section of the Ordovician) at 7006-7247 feet, with 110 feet of Ellenberger lime continuing to the present total depth. First showings were logged at 7169-7200 feet, same having been reported last week, with increases at 7225-29 feet and 7270-85 feet.

Royalty trading has been very active at soaring prices since the Crockett County deep test reached the Ordovician, although demand for royalty has been brisk in the general area since it became known some 18 months ago that a deep test would be drilled. Virtually all leases for miles around the test have been withdrawn from the market for several months, and little opportunity remains for late comers to obtain protection near the unit block. Todd 1 is located near the center of NE Section 67, Block "U-V", GC&SF Ry survey, and about 35 miles southeast of the Big Lake field.

In the event of commercial production this Crockett County wildcat will likely draw a pipe line connection promptly through an extension of Humble Pipe Line Company's system serving the World-Powell shallow lime field, located about 12 miles to the northwest. Stanolind Oil & Gas Company is absorbing the bulk of its controlled oil in West Texas, using the facilities of the above carrier in making tenders to Stanolind Pipe Line Company's Mid-Continent system near Ranger.

Correlation of Formations

Correlation of key formations logged by Todd 1 with the logs of the 12 deep completions in the Big Lake field indicates a close conformity, with allowances made for natural rise to the southeast from the Big Lake area. Noble Drilling Company held contract to drill Todd 1 with rotary to 7500 feet at a flat price per foot, with extra compensation for coring. Indications are that the first test may be drilled and fully equipped into tanks for about $125,000.

Big Lake Oil Company's University 1-C, a former Ordovician lime producer in the Big Lake field, was drilling in lime with rotary below 9505 feet late last week, or 485 feet below the depth of the deepest producer in the field.

Having failed to attract a pipe line connection from nearby major company trunk lines, L. C. Harrison, Fred Turner and others are preparing to build a short four-inch line to a tank car loading rack to create a market for their wildcat producer on the Addis land, near Odessa, Ector County. This wildcat was deepened to 3927 feet, resulting in a gain in the oil flow from the last 16 feet of lime penetrated, and is rated at 20 barrels hourly. It is pinched to 10 barrels per hour with 14/64-inch choke, carrying 600 pounds back pressure on casing. Arrangements have been made to sell the production, which will not be restricted until the area reaches 10,000 barrels daily unless physical waste appears, to independent refineries at El Paso and Big Springs, Texas, using tank cars in making deliveries.

Production encountered at 2578-80 feet in the Concho County wildcat test of Mintex Oil Company on the Sam Waring ranch, NEc Section 163, T&NO Ry. survey, is not sufficient to make a commercial pumper. A preliminary pumping gauge December 3 caused the well to pump off within a few hours after removing the accumulated head of fluid. It may be deepened and tested further.

An open flow test given Sid Richardson et al's John Sealy 2, an outpost well in southern Winkler County and about 1½ miles northeast of production in the Gulf-O'Brien field, yielded 405 barrels of 36 gravity oil during first 19 hours from sandy-lime at 3105 feet. This well is in the SWc N½ SW Section 94, Block A, and failed to fulfill early expectations on potential.

Third Test Makes Foard County Look Still Better

Wichita Falls, Texas.—The outlook for commercial production on the Navarro structure in western Foard County and west of the established oil and gas areas comprising the North Texas district has been greatly enhanced since The Texas Company's third test on the structure gauged 30,000,000 cubic feet of dry gas in sandy-lime formation at 2949-3099 feet. The two previous tests on the Johnson ranch gave encouragement in the form of numerous oil and gas showings, including some that would almost qualify as commercial production, but the first wildcat was abandoned at 4005 feet, and the second at 4490 feet. The latest try for production on the 8600-acre block is known as L. K. Johnson 3, located 1050 feet from the north and 1950 feet from the east lines of Section 36, block "L", S. P. Ry. survey. It has a surface elevation of 1625 feet, and logged the base of the red beds at 1152 feet.

The cable tool crew engaged in drilling Johnson 3 had instructions to kill the heavy gas flow with water and after drilling through the gas horizon lower the 8¼-inch pipe. First gas was logged at

2949 feet, and increased to 2,500,000 cubic feet at 2965-70 feet, while the last nine feet of hole drilled yielded the maximum flow. The above company's first wildcat had its best oil showings between 3272-3308 feet, while the second test yielded eight barrels of 40.8° gravity oil daily at 4011-14 feet.

Merry Brothers, V. C. Perini and Darby Petroleum Company's Carl Puersel 1, a wildcat scheduled to try for deep production on the Narcisso structure in west central Cottle County, is drilling below 4250 feet while carrying 8¼-inch pipe. Numerous water sands were encountered in the last 1000 feet of hole drilled.

Rated at from 350 to 500 barrels of oil daily, Consolidated Oil Company's W. H. Portwood 1 serves as a connecting link between the southwest edge of the Harmel pool and a recent outpost strike, and will likely stimulate drilling on surrounding leases in the extreme southwest corner of Archer County. Portwood 1 is located in the south half of Section 1581, T. E. & L. survey, and drilled the first 7½ feet of oil sand, which was topped at 1350 feet, with rotary bit. It has since been deepened to 1359 feet with tools. This well is located on 40-acre lease acquired on strength of an oil strike made early in November about 1100 feet to the south by The Texas Company on the E. H. and J. H. Morrison 80-acre lease in NW Section 1580. Morrison 1 originally drilled oil sand at 1329-32 feet, but was deepened last week, resulting in water sand at 1334-35 feet. It has been plugged back one foot, and is expected to make a 70-barrel pumper. The Gunsight lime was logged at 1314-17 feet, with a surface elevation of 1247 feet.

Delay in the erection of storage facilities has prevented an accurate production gauge on J. I. Staley et al's wildcat discovery well on the Andrews ranch, located in the southeast Anarene area, Archer County. This wildcat was reported last week as having given assurance of a profitable pumper from sand logged at 992-1002 feet, with a surface elevation of 1156 feet. It is near the center of the south line of the R. R. Rainey survey, and surrounded by a 240-acre drilling block.

Use of acid solutions for rejuvenating stripper wells in the various lime horizon fields in North and West Central Texas is now quite general, with most of the major companies participating in this simple and rather inexpensive method of stimulating production. The lime belt in the South Vernon district, Wilbarger County, has been invaded by the treating companies with indications that results will be profitable to well owners. Davis Oil Company's W. T. Waggoner 5, located in the southwest part of the county was treated with 800 gallons of solution, and pumped 140 barrels of oil and 25 barrels of water during first 24 hours after removing the load placed in the hole. This well was pumping eight barrels oil and a like amount of water daily from the 2700-foot lime.

West Texas Completions All Shallow With Small Initial

San Angelo, Texas.—Four out of the five counties in West Texas in which wells were completed during the week contributed five oil wells and one gas well, the oil wells having a total flush production of 1435 barrels, with Barnsdall Oil Company's Jim Henry 3 in Ward County yielding an estimated 31¼ million cubic feet of gas. The largest oil well completed during the week was Noble Drilling Company's T. W. Baker-Shell 1, Glasscock County, which produced 1000 barrels at 2122 feet. For West Texas all the completions were relatively shallow, the deepest being Joe Rush et al's Jim Wheat 2 in Loving County, which made 180 barrels at 4344 feet.

A detailed list of the week's completions follows:

Company, Well and Location	Initial Production Bbls.	Depth
Borden County—		
Westhyde Investment Co., R. H. Looney 1	*	3705
Glasscock County—		
Noble Drilling Co., T. W. Baker-Shell 1	1000	2122
Loving County—		
Joe Rush et al, Jim Wheat 2	180	4344
Pecos County—		
Cardinal Oil Co., Tippett-Kirby 14-E	25	400
Kone Production Co., Pecos Valley Oil Co. 1	*	1651
Ward County—		
Barnsdall Oil Co., Jim Henry 3	¶31¼	2076
Jack Leidecker & Clayton, J. B. Bennett 2	150	2552
R. F. Owen et al, W. H. Lee 1	*	2720
Stanolind O&G Co., W. T. Grimes 1	80	2475

Two Gray County Wells Have Large Initial and Hold It

Pampa, Texas.—Two completions within several miles to the northwest and southeast of the Lefors townsite, Gray County, yielded unusually large initial flows from the granite wash formation, and failed to sustain a customary rapid decline when allowed to produce at capacity while testing for five days. Other sections of the Panhandle district also contributed a sizeable volume of new oil production during the week.

Magnolia Petroleum Company's Fee 7, lease No. 227, afforded a slight extension to the Finley-Brown-Wright area, situated northwest of Lefors, in making an initial flow of 1675 barrels of 42 gravity oil from granite wash horizon at 2774-2849 feet. The gas volume tested 2,600,000 cubic feet daily, with the gas yielding 1.93 gallons of gasoline per 1000 cubic feet. Fee 7 is located 660 feet from the northwest corner of SW Section 14, Block 3, I&GN Ry. survey, and a half-mile due south of Fee 6, which was abandoned at 4070 feet early last month after failing to produce oil or gas. Both are east offsets to completed wells. Fee 7 flowed 1465 barrels of pipe line oil December 7, or the fifth day after starting its flow.

The Texas Company's G. H. Saunders 22, located southeast of Lefors, proved to be one of the largest wells completed this year in the Panhandle in gauging 4010 barrels during first 24 hours, with the production averaging 3880 barrels daily the following five days. It is producing from granite wash formation at 2675-2740 feet, with a surface elevation of 2774 feet. The granite wash horizon was topped at 2590 feet. The flow of gas accompanying the oil is estimated at 3,000,000 cubic feet daily. Saunders 22 is located in the southwest corner SE¼ Section 4, Block 1, ACH&B survey.

Carson County's three completions are credited with a combined potential of 1600 barrels daily, with Skelly Oil Company's Henry Schafer (west) 20, C SE Section 87, Block 4, I&GN Ry. survey, taking first position. This inside location on the company's big leasehold swabbed 36 barrels of high gravity oil per hour from saturated lime formation at 3086-97 feet, with a total depth of 3113 feet. About three miles due north, Sinclair Prairie Oil Company's E. Cooper 1 swabbed 20 barrels hourly on 10 hour test after shot of 95 quarts in lime at 3062-3115 feet. Cooper 1 is located in SWc NW Section 4, Block 9, I&GN Ry. survey. It is bottomed 19 feet above sea level. Gulf Production Company's E. Cooper 6, located in the adjoining section to the west, swabbed 225 barrels oil on 12 hour test from lime at 3035-3075 feet, with a surface elevation of 3113 feet.

North Texas Completions Small With Many Failures

Wichita Falls, Texas.—With 30 completions, 13 of which were oil wells and 17 of which were dry holes, the North Texas district had a relatively active week, with Archer, Wichita, Wilbarger and Young Counties contributing the producers which had an aggregate initial production of 197 barrels, or an average of about 15½ barrels per well. In six counties of the district contributing dry holes, it is interesting to note that the deepest hole abandoned this week had a depth of only 2326 feet, with most of them running well under 1500 feet.

A detailed list of completions in North Texas district follows:

Company, Well and Location	Initial Production Bbls.	Depth
Archer County—		
Benson-Benson & Continental Oil Co., J. N. Prideaux 1	*	2253
Bridwell Oil Co., Abercrombie 1	3	1222
Carter & Alexander, C. S. Arnold 2	20	1186
S. Z. Francis et al, Pruett-Webb 1	*	752
R. N. Hamilton et al, Roddy-Stehlik 1	*	600
Houston & Houston, Browning 10	5	460
W. T. Hutcheson et al, Power Banking Co.-Gulf 1	*	2326
D. T. Montfort et al, Snider 1	*	740
Morris & Dunn, Morbitzer 1	*	1090
J. G. Steele et al, Keyes 1	*	1406
M. L. Wheeler et al, Penartz 1	*	780
Clay County—		
J. C. Clower et al, Oliver 1	*	1001
W. H. Metzner et al, Thornberry 1	*	1342
Cooke County—		
Danciger O&R Co., Davidson 1	*	1503
Wichita County—		
P. J. Flynn et al, Woodward 4-B	*	1075
John Head et al, Hodges 2	35	1747
Mogren & Anderson, Goetze 31	15	912
Wilbarger County—		
The Texas Co., W. T. Waggoner 408-A	10	1045
Texas State Oil Co., Shipley 1	60	1488
Jack County—		
A. C. Parks et al, Webb 1	*	770
Young County—		
Brazelton et al, Belknap 4, Section 21	*	751
R. Bruton et al, Jones 1	*	673
Hunter Oil Corp., Taack 2, Section 158	15	1093
Iron Mountain Oil Co., Jordan 2, Section 1903	15	656
Tatum 15, Section 1908	10	673
Kleiner & Riggs, Larimore 15-A, Section 2246	3	731
L. F. Kubecka et al, Cullers 3	3	571
J. J. Moran et al, Howard 6, Section 3401	*	980
R. C. Parker et al, Blount 1	*	2218
Worth Oil Co., Geo. Garrett 3-C	3	521

Yates Field Operators Will Not Protest Proration

San Angelo, Texas.—Opposition will not be voiced by operators against a reduction of 4000 barrels in the allowable production of the Yates field, ordered by the Texas Railroad Commission effective December 10. Under the revised schedule the field will be allowed 61,000 barrels daily from 402 producing wells. Previous attemps to enforce a lower allowable in the field have been blocked by one of the leading property owners resorting to court restraining orders against the commission. However, this concern has agreed to accept its share of the cut since the reductions are state-wide.

Gray County Completions Boost Panhandle Average

Pampa, Texas.—Seven oil wells and two gas wells in the Texas Panhandle contributed 7315 barrels of flush oil and 50½ million cubic feet of gas, the bulk of the oil coming from three wells in Gray County and 40 million feet of the gas coming from Jim Cloud, Incorporated's, C. R. Jones 1, a workover well in Moore County. No failures were recorded during the week.

A detailed list of the completions by counties follows:

Company, Well and Location	Initial Production Bbls.	Depth
Carson County—		
Gulf Prod. Co., E. Cooper 6	400	3075
Sinclair Prairie Oil Co., E. Cooper 1,	450	3115
Skelly Oil Co., Henry Schafer-West 20	750	3113
Gray County—		
Kewanee O&G Co., J. S. Morse 1-F	25	2669
Magnolia Pet. Co., Fee (No. 227) 7	¶2½-1675	2849
The Texas Co., G. H. Saunders 22	¶3-4000	2740
Wetzel Oil Co., Morse-Nabob 2	¶5	2675
Hutchinson County—		
C. J. Oates et al, Starnes 2	15	3204
Moore County—		
Jim Cloud, Inc., C. R. Jones 1, (wo)	¶40	3688

West Central Texas Report Includes 12 Completions

Eastland, Texas. — Shackelford and Eastland Counties, West Central Texas, contributed 350 barrels of flush oil and three quarters of a million cubic feet of gas during the week from six oil wells, four of which were in the former county. Six dry holes were also recorded in the district, four in Callahan County and two in Shackelford.

A detailed list of the completions for West Central Texas follows:

Company, Well and Location	Initial Production Bbls.	Depth
Callahan County—		
Gallagher & Lawson, A. R. Kelton 1	*	775
H. B. House et al, Finley 1	*	648
J. A. Miller et al, Cutbirth 1	*	360
Perry et al, Hatchett 1	*	436
Eastland County—		
Texas Pacific Coal & Oil Co., C. E. Allen 1	¶½-40	3010
F. W. Allen 2-C	¶¼-230	3105
Shackelford County—		
Bissey et al, Horton 1	15	670
Geo. Calahan et al, Jeter 2	15	900
Cross & Wilson, Green 1	*	920
Freeman-Hampton Oil Co., Morris-Buie 2, Sec. 204	45	1590
Lowe & Delaney, Alexander 5	5	870
Pruitt et al, Clausell 1	*	710

East Texas Border Wildcats Show Nothing Significant

Shreveport, La.—Wildcats in three of the East Texas Border Counties failed to record any shows of significance during the week. A detailed report of their statis follows:

In Marion County, Starling and Preston's Henderson 1, R. Bennington survey, was shut down at 1800 feet. Green Smitherman et al's Lindsay 1, Alex Albright survey, was coring to deepen, the total depth being 2327 feet.

In Panola County, Carter et al's Wooten 1, P. Martin survey, was a derrick.

In Shelby County, Neil Lease & Oil Well Syndicate's W. P. Harvey 1, W. P. Harvey survey, was moving in materials.

Two Hundred New Tests for Texas

East Texas Field gets bulk of new permits with 20 new locations announced for Conroe

Austin, Texas.—Notice of intention to drill in Texas for the week ending December 7, included 202 wells, the usual bulk of new wells being in the counties making up the proven area in East Texas, and 20 in the Conroe area of Montgomery County:

In Archer County, Benson Brothers, Bowie, Texas, will drill J. L. Prideaux (60 acres) 1, J. Ostane survey, 150 feet from south and west lines.

In Anderson County, McAlister & Barclay, 911 W. Sycamore street, Palestine, Texas, announced J. C. Beard 1, 150 feet from north and east lines of the 62 acre tract, J. Trimmer survey.

In Atascosa County, Dyck Oil Company, San Antonio, will drill W. E. Tom (991 acres) 1, E. O'Byrne survey No. 7, 1320 feet from south and west lines.

Eight for Bastrop County

Eight wells were announced in Bastrop County, where Ogden & Reed, Austin, have No. 1 and No. 2 on the J. W. Mears 76 acre tract out of the Wm. Leach survey; No. 1 is 150 feet from north and 300 feet from east line, and No. 2 600 feet west of No. 1. Same operators announced six locations on the C. L. Riddle 94-acre tract, J. Gray survey—No. 2, 600 feet north of No. 1; No. 3, 600 feet north of No. 2; No. 4, 600 feet south of No. 1; No. 5, 600 feet east of No. 3; No. 6, 600 feet east of No. 2; No. 7, 600 feet east of No. 1.

In Bee County, C. R. & M. Drilling Company, San Antonio, announced J. B. Staltzfuz 2 (40 acres), J. M. Uranga survey, 150 feet from north and west lines. Trio Oil Company, Beeville, J. W. Harris 1, (10 acres), J. M. Uranga survey, 150 feet from east and 200 feet from south line of Tract 11. W. S. Poole, Beeville, J. C. Wood 1, H&GN survey, 450 feet north of center of south line.

In Brazos County, Atkins, Catlett & O'Neil, San Antonio, K. T. Williams (1171 acres) 1, Block 1. A. Millican survey, 623 feet from south and 398 feet from west line.

In Brazoria County B. H. Wisdom et al, Damon, Fee (22 acres) 1, A. Darst survey, 67 feet from west and 150 feet from south line. Tri-Fin Oil Company, Houston, E. Kempner (80 acres) 1, J. L. Holmes survey, 2076 feet from north and 919 feet from east line.

In Brown County McNelly & Warren, Bangs, F. F. Fitzgerald (40 acres) 1, Walker survey, 300 feet from north and 150 feet from west line.

In Clay County, Seitz, Comegys & Seitz, Wichita Falls, L. S. Wright (160 acres) 1, TE&L survey, 170 feet from east and 450 feet from south line.

In Coleman County, H. S. Culp, Coleman, J. C. Dibrell (200 acres) 1, H. Kigan survey, 2100 feet from north and 600 feet from east line of section.

Duval County Hot

In Duval County Buchanan, Schoolfield and Frasher, San Antonio, Sling (160 acres) 1, Section 118 survey, 330 feet from north and east lines of SE. Magnolia Petroleum Company, Dallas, G. Wendt (120 acres) 12, Section 44, J. Poitevent survey, 230 feet from south and 330 feet from west line; J. V. Allen (80 acres) 2, Section 42, J. Poitevent survey, 330 feet from south and east lines; C. W. Hahl (2660 acres) 3, J. Poitevent survey, 330 feet from north and west lines; J. W. Riley (160 acres) 1, J. Poitevent survey, 330 feet from north and east lines. Humble Oil & Refining Company, Houston, C. W. Hahl (640 acres) 1, Section 74 survey, 330 feet from south and west lines of section. L. F. Russ, San Antonio, C. W. Hahl B (40 acres) 3, Section 45, J. Poitevent survey, SW corner NW SE. Hogan & Cowden, San Antonio, A. Parr (320 acres) 1, Section 26, C. Collins survey, 207 feet north of center of south line of section. Central Producers Inc., Laredo, Johnson-Tuck, (40 acres) 1, Section 44 survey, 150 feet from south and west lines NW NW; No. 3, Section 42 survey, 330 feet from north and east lines SE SW; No. 4, 330 feet from south and east lines SE SW; H. Wendt (40 acres) 1, Section 43 survey, 150 feet from south and east lines SE NE. Huff & Kyle, Laredo, A. Roach (40 acres) 1, Section 457, Block 7, 43 feet from south and 865 feet from east line. San Diego Oil Corporation, San Antonio, L. Bennett (40 acres) 4, Section 44 survey, 200 feet from south and east lines SE SW. Magnolia Petroleum Company, Dallas, G. Wendt, (120 acres) 12, Section 44, J. Poitevent survey, 330 feet from west and 230 feet from south line. Reynosa Oil Company, Wichita Falls, C. W. Hahl (82 acres) 1, Section 42 survey, 330 feet from south and west lines.

In Eastland County, T. P. Coal & Oil Company, Fort Worth, B. Allison (212 acres) 1, A. Popejoy survey, 330 feet from north and east lines of section; Fee (1116 acres) 10, C. L. Durocher survey, 330 feet from south and east lines.

In Fort Bend County, Humble Oil & Refining Company, Houston, Lockwood-Sharp B, 9, John Rabb survey, 3728 feet from west and 526 feet from south line. Gulf Production Company, Houston, F. I. Booth (1107 acres) A9, S. Kennedy survey, 485 feet south of center of north line.

In Freestone County, C. V. Hudgens, Jewett, S. E. McAshan (1200 acres) 1, G. Diaz survey, 1800 feet from north and 1250 feet from west line.

East Texas

In Gregg County, P. L. Hoffman, Gladewater, B. F. Phillips (16 acres) 3, D. Ferguson survey, 183 feet from north and 330 feet from west line. E. M. Jones, San Antonio, L. D. Crim (10 acres) 2, M. Van Winkle survey, 330 feet from north and 200 feet from east line. Lloyd Oil Corporation, Fort Worth, B. B. Fenton (50 acres) 4, M. Irwin survey, 330 feet from north and 584 feet from east line. R. Lacy, Longview, Fee (3 acres) 3, M. Van Winkle survey, 190 feet from north and 187 feet from west line. J. I. Staley, Wichita Falls, T. Snoddy (6 acres) 2, Wm. Robinson survey, 155 feet from west and 177 feet from south line. W. F. Nelson, Dallas, L. Radford (5 acres) 1, G. F. Penn survey, 384 feet from north and 176 feet from east line. Texota Corporation, Eldorado, Ark., M. Fenn (11 acres) 2B, D. Ferguson survey, 75 feet from north and 150 feet from east line. Houston Oil Company, Houston, S. B. Hall (50 acres) 5, D. Dainwood survey, 330 feet from north and 170 feet from west line. Quad Corporation, Dallas, Guernsey (40 acres) 4, G. F. Penn survey, NE corner; 5, 330 feet from north and west lines. J. M. Foshee, Gladewater, Gladewater 1, H. R. Hokit survey, 60 feet from SW and 150 feet from SE line Block 45. W. L. Tarkenton, Gladewater, H. F. Brown (12 acres) 1, S. S. Davis survey, 187 feet from north and 174 feet from west

line. Butler, Price & Maynor, Tyler, Fee (2 acres) 1, M. McCurry survey, center. Superior Oil Company, Dallas, H. Pritchard (100 acres) A12, F. W. Johnson survey, 600 feet SW of No. 10. Southwestern Gas & Electric Company, Gladewater, Fee 1, L. J. Rigsby survey, 25 feet from north and 16 feet from east line. Byrd-Frost, Inc., Dallas, J. J. Reppond (50 acres) 3, D. Sanchez survey, 330 feet from south and east lines. J. C. Hurley, Houston, S. P. Hughey (1 acre) 1, M. Van Winkle survey, 125 feet from north and east lines of Block 170. Doan & Adkisson, Fort Worth, Mrs. J. A. Sparks (2 acres) 1, M. Van Winkle survey, center. E. P. Humphreys, Tyler, J. A. Knowles (8 acres) 2, G. F. Penn survey, 119 feet from west and 330 feet from south line. Bass & Dillard, Wichita Falls, S. Carr (9 acres) 1, M. McCurry survey, 175 feet from north and 184 feet from west line; S. Carr (16½ acres) 3, M. McCurry survey, 661 feet from east and 210 feet from south line; 2, 178 feet from west and 210 feet from south line. Rajo Oil Corporation, Fort Worth, J. C. Barrett (80 acres) 2, B. W. Witcher survey, 378 feet from north and 330 feet from west line; 3, 660 feet east of No. 2; 4, 660 feet east of No. 3. Arkansas Fuel Oil Company, Shreveport, La., W. T. Burnside, (209 acres) 14, F. W. Johnson survey, 742 ft northeast of No. 15; 15, 543 feet northeast of No. 16; 16, 475 feet northeast of No. 17; 17, 540 feet northeast of No. 18; 18, 150 feet from south and west lines; 11, 150 feet from east and 154 feet from south line; D. B. McPherson (72 acres) 5, W. H. Castleberry survey, 420 feet east of No. 4; 6, 420 feet east of No. 5; 7, 420 feet east of No. 6. Sun Oil Company, Dallas, M. T. Cole (266 acres) 19, A. Park survey, 295 feet southeast of No. 16. Stanolind Oil & Gas Company, Fort Worth, J. J. Flewellen A (200 acres) 11, M. Mann survey, 365 feet from north and 314 feet from east line. Atlantic Oil Producing Company, Dallas, J. M. Moore (456 acres) 40, Johnson survey, 300 feet south of Rhoads No. 7. Magnolia Petroleum Company, Dallas, I. Zeigler (83 acres) 6, Ruddle-Hampton survey, 330 feet from north and 939 feet from east line; S. Carr (67 acres) 6, M. McCurry survey, 241 feet from east and 211 feet from south line; G. Davis, (25 acres) 6, W. P. Chisum survey, 432 feet from north and 150 feet from east line; G. W. Richey, (45 acres) 6, H. H. Edwards survey, 257 feet south of No. 4; L. A. Griffin (44 acres) 11, M. Van Winkle survey, 343 feet south of No. 3; Todd-Stinchcomb (111 acres) 8, W. H. Hart survey 330 feet from south and west lines; N. Radford, 7, J. Blair survey, 355 feet northeast of No. 8; 8, 312 feet from west and 194 feet from south line. Shell Petroleum Corporation, Dallas, J. B. Watson, (384 acres) 27, J. S. Caruthers survey, 575 feet southwest of No. 10; M. T. Cole (120 acres) 8, T. Johnson survey, 165 feet from north and 167 feet from west line; B. Moore (47 acres) 4, J. Moseley survey, 230 feet from west and 365 feet from south line; J. Moore (369 acres) 24, F. W. Johnson survey, 500 feet west of center of east line; D. Carr (45 acres) 4, M. McCurry survey, 330 feet from south and east lines; W. D. Lacy (119 acres) 6, E. H. Grisham survey, 825 feet from west and 767 feet from south line. Gulf Production Company, Houston, T. C. Reeves (80 acres) 7, G. F. Penn survey, south offset to Blue Star No. 6C; 5, northwest corner; 6, 50 feet from north and 403 feet from west line; G. Davis (50 acres) 6, W. P. Chisum survey, 121 feet from west and 330 feet from south line. Sinclair Prairie Oil Company, Fort Worth, A. A. King (127 acres) C2, E. H. Angell No. 2 survey, 330 feet from south and west lines; A. A. King (337 acres) B26, A. Cormack survey, south offset to Rhoads No. 5; B29, south offset to Rhoads No. 4.

In Gray County Gibson Oil Company, Amarillo, J. B. Bowers (120 acres) 2, Section 92, Block B2, H&GN survey, 990 feet from east and 330 feet from south line; 1, 330 feet from south and east lines.

In Glasscock County, Llano Oil & Development Company, Inc., Llano, W. P. Edwards (40 acres) 1, Section 17, Block 33, T&P survey, 330 feet from south and east lines SE SE.

In Harris County, Wilson Oil Company, Houston, Wheeler-Pickens (2½ acres) 2, J. B. Stevenson survey, 165 feet from north and 75 feet from west line Block 21. Rolyat Production Company, Humble, Cherry (9 acres) 8, Jas. Strange survey, 120 feet from north and 225 feet from west line.

In Harrison County, Roscoe & Findley, Marshall, V. Powell (52 acres) 1, L. Watkins survey, 550 feet from east and 330 feet from south line.

In Howard County, Sinclair-Prairie Oil Company, Fort Worth, Dodge Est. (640 acres) 4, Section 11, Block 30, Township 1S, 330 feet from west and 968 feet from south line of section.

In Montgomery County, W. B. Hamilton, Wichita Falls, E. Moorehead (40 acres) 2, L. A. Lang survey, 466 feet from north and 360 feet from east line of survey. Gulf Coast Drilling Company, Houston. So. Tex. Dev. (200 acres) 1, T&NO Section 9, 1235 feet from north and 466 feet from west line. Standard Oil Company of Kansas, Wichita, Kansas, Smith-Ratliff (102

BOYD ENTERTAINS STAFF AT BARBECUE

Following the 13th annual meeting of the American Petroleum Institute at Houston, recently, W. R. Boyd, Jr., Executive Vice President, took practically the entire Institute staff to his lodge in Freestone County, Texas, for a barbecue picnic.

Those shown in the above picture are: Vic Scales, Fred VanCovern, Jerry Stillwell, (kneeling), Lacey Walker, Taas Watson (Boyd's brother-in-law), Uncle Roe and his fox, Harry Crozier, W. R. Boyd, III (keeling), Carl Young, Bill Boyd, Doc Anderson and Dave Stroop.

acres) 1, No. 6 T&NO survey, 466 feet from north and 1066 feet from east line; A. A. Madeley (63 acres) 1, Ransom House survey, 466 feet from north and 464 feet from east line. Tidal-Strake, Conroe, J. W. Lewis, (665 acres) 6, C. B. Stewart survey, 2663 feet from north and 467 feet from west line; 5, 467 feet from north and 1400 feet from west line. Amerada Petroleum Corporation, Fort Worth, So. Tex. Dev. (83 acres) 1, C. A. West No. 14 survey, 350 feet from north and 410 feet from west line. Danciger Oil & Refining Company, Fort Worth, O. L. Alexander (18 acres) 1, J. McHorse survey, 540 feet from north and 363 feet from west line. Violette & Griffin, Fort Worth, Hooper (145 acres) 5, M. DeMoss survey, 1374 feet north of No. 7; 7, 633 feet from west and 304 feet from south line. Abercrombie-Harrison Oil Company, Houston, Alexander (100 acres) 3, J. McHorse survey, 195 feet from east and 300 feet from north line. Midland Oil Company, San Antonio, V. Walters (108 acres) 2, W. Strickland survey, 1398 feet from west and 466 feet from south line. The Texas Company, Houston, E. Moody (473 acres) 4, Ransom House survey, 466 feet from north and 2483 feet from west line; 8, 932 feet south of No. 3; 7, 840 feet south of No. 6; 6, 466 feet from north and east lines; 5, 466 feet from north and 1549 feet from east line; W. S. Rhodes, 300, 2, T &NO survey, 875 feet northwest of No. 1; 3, 875 feet northwest of No. 2; 4, 1000 feet northwest of No. 3; W. S. Rhodes (300 acres) 6, T&NO survey, 880 feet east of No. 5; 5, 466 feet south of center of north line. Humble Oil & Refining Company, Houston, So. Tex. Dev. (219 acres) B3, C. T. Darby survey, 356 feet west of center of east line; B2, 367 feet east of center of west line; R. L. Cartwright (40 acre) C1, J. A. Davis survey, 350 feet from west and 599 feet from south line; C2, 300 feet from east and 599 feet from south line; A. A. Madeley (763 acres) 6, Ransom House survey, 1164 feet from north and 466 feet from west line; H. N. Moore (919 acres) 1, L. Smith survey, 543 feet from south and 1781 feet from east line; 2, 466 feet from west and 2105 feet from north line; So. Tex. Dev. A (1426 acres) 33, T. Slade survey, 933 feet east of No. 32; 32, 933 feet north of No. 31; 31, 466 feet from south and 1093 feet from east line.

In Matagorda County, P. S. Griffith, Matagorda, Baer Est. (1100 acres) 3, S. Ingram survey, 3500 feet from south and west lines. United North & South Development Company, San Antonio, St. LB&M (20 acres) 1, J. C. Keller survey, center.

In McMullen County, Jacob, Buzzini & Pickett, Inc., San Antonio, L. Jacob, 10A, W. H. Jacob Section 8, 660 ft south of No. 9A.

In Navarro County, C. D. Speed et al, Corsicana, C. S. West (250 acres) 1, M. Boren survey, 2000 feet from west and 2700 feet from south line.

In Pecos County, Cardinal Oil Company, San Angelo, J. H. Tippett (160 acres) 15, Section 40, Block 194, GC& SF survey, center; 14, 220 feet from north and 2482 feet from east line of section. W. L. McCurdy, McCamey, M. A. Smith (640 acres) 1, Section 2, Block 194, GC&SF survey, 1958 feet from north and 275 feet from east line section.

Rusk County

In Rusk County, Orr & Orr, Henderson, J. C. Hale (24 acres) 1, M. V. Pena survey, 330 feet from north and west lines. American Liberty Oil Company, Dallas, E. E. Thrash (31 acres) 4, F. Cordova survey, 330 feet from north and 612 feet from west line. C. L. McMahon, Tyler, J. Lee (96 acres) 3, P. Tipps survey, 330 feet from north and west lines. R. B. Monroe, Jr., Tyler, D. Bradford (10 acres) 1, J. Ximinez survey, 330 feet from west and 407 feet from south line. Westheimer & Daube, Kilgore, W. P. Brightwell (22 acres) 3, E. G. Sevier survey, 430 feet from east and 150 feet from south line. Ward Oil Corporation, Ardmore, Oklahoma, E. S. Thrash (200 acres) 15, F. Cordova survey, 353 feet northeast of center of southwest line. Wheelock & Collins, Corsicana, D. Wells (220 acres) 13, Y'Barbo & Hobson survey, 330 feet from west and 1360 feet from south line. Big Indian Oil & Development Company, Dallas, J. Lee (24 acres) 2, P. Tipps survey, 412 feet west of center of east line. S. K. Vierson, Okmulgee, Oklahoma, A. Givens (12 acres) 3, R. W. Smith survey, 175 feet from north and 155 feet from east line. Leonard Petroleum Company, Washington, Pennsylvania, A. G. Gill (33 acres) 4, W. A. Elliott survey, 330 feet from north and west lines. E. L. Pinkston, Tyler, Fee (1 acre) 1, F. Cordova survey, 50 feet from east and 150 feet from south line. Lide-Rowe Oil Company, Shreveport, La., C. V. Young (30 acres) 4, M. J. Pru survey, northwest corner. J. E. Mabee Company, Arp, W. P. Brett, 40, 5, M. J. Pru survey, 560 feet from west and 157 feet from south line. W. J. Anson, Longview, R. Redwine, 5, 1, Block 3, J. Ximinez survey, center. American Liberty Oil Company, Dallas, Pinkston (87 acres) 4, M. J. Pru survey, south offset to Marwil No. 1. Producers Purchasing Company, Fort Worth, W. M. Frederick, (20 acres) 5, J. Ximinez survey, 440 feet from west

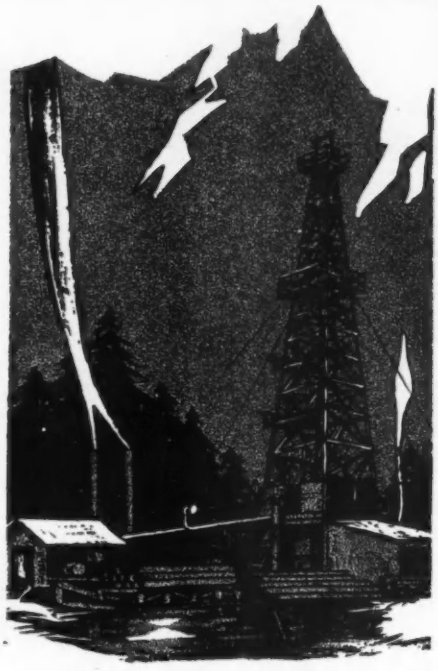
"WE KILLED A B'AR"

Austin, Texas.—According to the story told by Commissioner Earnest O. Thompson, Judge Byrant shot the lion out of a tree, and the Commissioner finished it off with another shot.

The lion was killed Sunday, November 20, on the Martin Ranch in La Salle County. It weighed 160 pounds, and measured seven feet and seven inches from tip to tip.

Left to right in the picture: Federal Judge Randolph Bryant; Texas Commissioner Earnest O. Thompson; Enoch Hughes, and former Texas Attorney General R. L. Bobbitt.

Standco
NO-SMOKE
ASBESTOS
Brake Lining



...it must be good!

STANDCO Brake Lining has drilled nearly all the 9,000 foot wells at Kettleman Hills —is being used almost exclusively on the 8,800 foot holes in the Big Lake, Texas, Field—and a single set drilled 25 shallow wells on the East Texas "snowbank" drilling. . . .

YOU should be using STANDCO!

DISTRIBUTORS NOTE! A few protected territories open. Write or wire for details.

STANDARD BRAKE LINING COMPANY
1137 VENICE BOULEVARD
LOS ANGELES, CALIFORNIA

Distributed By
HOUSTON OIL FIELD MATERIAL CO.
1816 Nance St., Houston, Texas
Branches at: Kilgore, Overton, Refugio and Freer, Texas, and Lake Charles, La.
SNETCHER & PITTMAN, INC.
901-903 S. E. 29th St.,
Oklahoma City, Okla.
Branch: Joinerville, Texas
MARTIN SPECIALTY CO.
Shreveport, La.
Export Sales Agents
OIL INDUSTRY APPLIANCES CO.
39 Cortland St., New York, N. Y.

and 194 feet from south line. East Texas Oil Refining Company, Dallas, J. Roberson (14 acres) 2, T. Grace survey, 330 feet from east and 275 feet from south line. A. Givens (20 acres) 3, R. W. Smith survey, 152 ft from west and 171 feet from south line. Gulf Production Company, Houston, N. Peterson (104 acres) 1, J. C. Barnett survey, 330 ft from south and west lines. G. G. Turner (312 acres) 18, F. Cordova survey, 330 feet from e and 2448 feet from south line; 19, 768 feet north of No. 18. W. A. Maxwell (84 acres) 3, F. Cordova survey, 330 feet from west and 384 feet from south line. J. W. Shaw (89 acres) 8, F. Cordova survey, 1590 feet from west and 330 feet from south line. The Texas Company, Shreveport, J. M. Price (90 acres) 8, T. M. White survey, 1273 feet from west and 330 feet from north line. Humble Oil & Refining Company, Houston, Mrs. W. L. Price (446 acres) 25, J. M. Scott survey, 2254 feet from north and 194 feet from east line. D. C. Joyner (59 acres) 4, F. Cordova survey, 350 feet from west and 1100 feet from south line. I. Holt, C, (99 acres) 7, W. H. Bears survey, 330 feet from west and 546 feet from south line. Mid-Kansas Oil & Gas Company, Shreveport, M. Kangera (105 acres) 7, P. Tipps survey, 330 feet from north and 2000 feet from east line;" 10, 1522 feet west of No. 7. Tidal Oil Company, Kilgore, J. S. Bean (10 acres) 2, J. Lewis survey, 215 feet from north and 330 feet from e line.

In Smith County, Iowa-Payne Oil Company, Tyler, F. B. Wilson (25 acres) 3, Jas. Jordan survey, 330 feet from south and west lines. The Texas Company, Shreveport, A. S. Jarvis (161 acres) 10, I. Moore survey, 2140 feet from east and 330 feet from north line.

In San Patricio County, Saxet Oil Company, Houston, F. S. Rachal (200 acres) 19, J. N. Seguin survey, 1236 feet northwest of No. 17.

In Shackleford County, Gilman & McMurray, Cisco, E. A. Jeter (6 acres) 2C, T&P Section 14, Block 11, 300 feet west of No. 17.

In Trinity County, South Gulf Oil Company, Dallas, Trinity Lumber (640 acres) 1, H&TC Section 17, 290 varas from north and 650 varas from east line section.

In Upshur County, Steen Drilling Company, Tyler, A. R. Loden (27 acres) 3, G. W. Hooper survey, 475 feet east of No. 1. California Petroleum Corporation, Shreveport, A. G. Dearing (70 acres) 7, J. M. Pineda survey, 424 feet from north and 239 feet from east line. Humble Oil & Refining Company, Houston, J. T. Miller, B, (99 acres) 7, D. Ferguson survey, 525 feet northeast of No. 3. A. L. Shelton (43 acres) 3, D. Ferguson survey, 330 feet from north and 150 feet from east line; 4, 330 feet from north and 920 feet from west line. J. M. Smith (90 acres) 4, J. M. Pineda survey, 424 feet from north and 237 feet from west line.

In Webb County, South Texas Oil Company, Laredo, Kaurel (640 acres) 5, Section 270, 450 feet from west and 303 feet from south line Block 10. Laurel (640 acres) 4, Section 270, 150 feet from west and 299 feet from south line Block 9. M. Vela (640 acres) 1, Section 263, 150 feet from south and 450 feet from east line Block 14. Dycke Oil Company, Laredo, Villareal (40 acres) 1, Survey 1100, 170 feet from north and 150 feet from east line northwest northwest.

In Ward County, J. C. Maxwell, Inc., Fort Worth, F. G. Smith (160 acres) 1, H&TC Section 26, Block 34, 330 feet from north and west lines of section. Magnolia Petroleum Company, Dallas, E. Brillhart (160 acres) 1 H&TC Section 13, Block 34, 330 feet from northeast and southeast line west one-quarter. Barnsdall Oil Company, Tulsa, J. Henry, 4, Section 28, Block 29, School survey, 330 feet from southeast and 990 feet from northeast line section. Atlantic Oil Producing Company, Dallas, University (160 acres) 1, Section 3, Block 16, 330 feet from south and east lines of section. Stanolind Oil & Gas Company, Fort Worth, S. H. Whitlock (20 acres) 1, H&TC Section 14, Block 34, 450 feet from northeast and 2200 feet from southeast line section. Gulf Production Company, Fort Worth, Hutchings (370 acres) 15, G&MMB&A Section 5, Block F, 1120 feet from north and 990 feet from west line. Skelly Oil Company, Tulsa, Oklahoma, E. Brillhart (160 acres) 1, H&TC Section 13, Block 34, 330 feet from south and west lines northwest one-half southeast one-half.

In Wharton County, Pure Oil Company, Beaumont, W. L. Stewart (160 acres) 1, M&C Section 25, 1650 feet from southwest and 330 feet from southeast line. Gardner & Tyler, Houston, W. A. Dayvault (298 acres) 1, Wm. Kinchloe survey, 600 feet from north and 2000 feet from west line.

In Winkler County, S. W. Richardson, Fort Worth, W. F. Scarborough (40 acres) 1, Section 18, Block 74, 330 feet from north and 990 feet from east line southwest one-quarter southeast one-quarter.

In Zapata County, J. H. Brower, Laredo, G. Uribe (40 acres) 2, Share 7, Block 8, Portion 6, 420 feet from northwest and 1058 feet from southwest line. T. J. Murray, Laredo, S. Vela (40 acres) 1, Share 4, ElGrullo, Block 145, 285 feet from northeast and 158 feet from southeast line.

Tuleta Gets Line Outlet; Two Horizons Promising

San Antonio, Texas.—Pipe line outlet is being provided for the Tuleta field, Bee County, as two horizons give the area a most promising outlook. Discovered early this summer, Tuleta has until the past several weeks been very much of a mystery. It now looms as one of the important producers of that immediate area.

Atlantic Pipe Line Company's line is to be a string of four-inch pipe running 4½ miles from the field to the company's gathering system in the Pettus field, where it connects into Humble Pipe Line Company's line to Refugio, where the oil again joins the Atlantic Pipe Line Company's line to tide water at Port Aransas.

The field's present output is only 885 barrels daily, but a number of completions and a proposed drilling campaign is expected to materially boost the production.

The production by wells is as follows: The Texas Company's Cox 1, 30 barrels; Wallace & Bowles' Harris 1, 297 barrels CR & M and O'Neill's Harris 1-A, 64 barrels; Coquat & Hawn's Harris 1, 52 barrels; Nichols' Harris 1, 130 barrels; Nichols' Harris 2, 122 barrels; Dirks Brothers Fee 1, 190 barrels. The latter well was shut down over the week end to plug back slightly to cut off lower water.

Weinert & Nichols have made the first of four locations, while Titus & Calloway will enter the field with several wells immediately. Gulf Production Company, Simms Oil Company, Edwin M. Jones, William F. Morgan interests and others are holders of acreage in the present probable producing area and will be called into the play within several weeks.

One completion was reported in the field during the week, it being from the first sand in the Jackson series. The well is Wallace & Bowles' Harris 1, Block 12, Section 13, which is reported as good for 15 barrels an hour from 4109-20 feet. It is showing 450 pounds on the tubing and 650 pounds on the casing through 5/8-inch choke.

Company, Well and Location	Initial Production Bbls.	Depth
Bastrop County—		
P. H. Wilson, R. M. Randle 1, Bernard Bymer sur....	*	2560
Bee County—		
Wallace & Bowles, Harris 1, blk 12, sec 13, Tuleta....	360	4120
Duval County—		
Mag. Pet. Co., Hahl-Riley 1, Sec. 42, N. Gov't Wells..	1440	2346
L. F. Russ et al, C. W. Hahl 2-B, Sec. 45	600	2311
Texas Co., H. Wendt 2, Sec. 42	960	2257
Karnes County—		
H. J. Porter, Ingram 1, Carlos Martinez sur, ...	*	3318
Medina County—		
W. L. Umburn, P. Jungman 4, N. B. Rogers Sur. No. 33	5	816
Milam County—		
Mitchalk & Clark, Johnson 2, J. J. Acosta sur	*	2216
Nueces County—		
Gulf Coast Oil Co., Bessie Elder 2, (wo) blk 29, H. B. Shepherd sur	130	4564
Saxet Gas Co., J. Dunn 9, E. Villareal sur	75	4082
O. R. Seagraves, Perkins & Legasse 1, blk 22, H. B. Shepherd sur, cratered, caught fire, still burning..	*	3145
Starr County—		
Los Olmos O&G Co., Kelsey Bass 33, Sec. 7, Por. 75-76-77	35	440
Kelsey Bass 34, Sec. 7...	35	448
Kelsey Bass 35, Sec. 7...	25	476
Kelsey Bass 36, Sec. 7...	25	490
Kelsey Bass 37, Sec. 7...	28	471
Kelsey Bass 38, Sec. 7...	30	466
Kelsey Bass 39, Sec. 7...	30	480
Kelsey Bass 40, Sec. 7...	30	494
Kelsey Bass 41, Sec. 7...	35	508
Dr. R. McCormick, Kelsey Bass 1, Share 7	*	502
Sioux Oil Co., Doyno 1, Sh. 77-A, Por. 81, Blk 4.....	50	1461
Travis County—		
E. A. Field, B. H. Bloor 1..	*	1195
Webb County—		
South Texas Oil Co., Laurel 3, blk 10, Sec. 270.....	1500	2269
Zapata County—		
Huff & Fudge, Guadalupe Uribe 1, Part 6, Share 7, blk 8, Borrego Grant	*	1500
H. Muckleroy, Jr., A. Trevino 1, Sec. 411, blk 10...	*	2372

Quit First Karnes County Test and Start Another

San Antonio, Texas.—Adams, Lysles, Porter and Humble Oil & Refining Company have abandoned their first test and have made location for the second in the Green area, Karnes County. The first test, located 1500 feet from the east line and 300 feet from the south line of the 275-acre Mrs. A. E. Ingram tract, Carlos Martinez survey, stopped at 3318 feet.

The test is about one mile northwest of the old Newberry well drilled two years ago by the Fort Bend Oil Company, which showed for a gasser of several million cubic feet at slightly below 2900 feet.

The new test is Porter et al's Reasoner 1, located 1800 feet to the south line and 650 feet to the east line of a 125-acre tract about three miles east of the Ingram well.

Making Deeper Try After Gas Show in Keeran Pool

San Antonio, Texas.—Union Oil Company's Keeran 2, semi-wildcat in the Keeran pool, Victoria County, made a drill stem test of a sand at 5495-5505 feet, where it showed for a large gasser. It has been deepened to 5508 feet, and another test is being made. The first test showed 500 pounds pressure in 10 minutes through half-inch top choke and quarter-inch bottom choke. The test tool had about two gallons of gasoline in it.

Another important well in the field is Gulf Production Company et al's Keeran 3, located 1320 feet northwest of the Victoria-Gulf Keeran 1, discovery producer. At last reports, it was below 5400 feet and was preparing to core for the sand.

Both of the tests are located in the M. de Leon survey.

Resume Operations in Bexar County Pool

San Antonio, Texas.—Chiquite Oil Company has again started drilling in the Cooksey pool, Bexar County, where the company controls a field producing from the Taylor marl. The newest well is Hunter 3, Section 14, J. Martinez survey, drilling at 1280 feet.

Refugio County Test Makes Salt Water and Goes Deeper

San Antonio, Texas.—Humble Oil & Refining Company's O'Connor 3, F. Rios survey in the eastern portion of Refugio County, which recently made a low gravity producer from 3136-48 feet, started showing considerable salt water last week and was deepened. At 3303-11, it tested 100 pounds pressure, dry gas, and is deepening.

The company has made locations for two more wells in the area, No. 4 in Refugio County, and No. 5 in Victoria County.

Wildcats Turn Government Wells Interest to Northward

San Antonio, Texas.—Interest in the Government Wells district of Duval County again swings northward with several important wildcats being started uptrend through Duval and McMullen Counties.

Buchanan et al's Sling 1, Survey 118, Duval County; Capps and Baker's Hagist 1, Section 6, J. W. Osborne survey; Howeth & O'Neill's Rhodes 1, Section 30, Rhodes ranch, will be watched with considerable interest as they follow the line of production in the district. In addition, a well is tentatively located in Section 211, Duval County, in Wood-Welder land, about three fourths of a mile east of Sun Oil Company's Duval Ranch 1, Section 78, which still gives promise of making a producer.

Sun Oil Company's well showed for production at 2137-54 feet a couple of months ago, but failed to make a producer. The hole was carried several hundred feet deeper, then plugged to 2159-67 feet, where tubing and rods have been run for a pumping test. Should it produce, the well will extend the Government Wells field three miles northeast or will open another pool.

Wilkins Seacord's Lundell 1, located in Section 60, southwest of the North Government Wells field and near the original field, is being started. It will do much to connect the areas.

Two important completions have been made in the southwestern portion of the north field. They are L. F. Russ et al's C. W. Hahl 2-B, NW SE Section 45, flowing better than 600 barrels initial from 2311 feet, and Magnolia Petroleum Company's Hahl-Riley 1, NW Section 45, which is good for 60 barrels an hour from 2307-46 feet.

Other Wildcat Tests

In Aransas County, F. E. Kistler, Trustee's, McCampbell 1, Block 58, Lot 1, McCampbell Ranch, set 456 feet of surface casing and is waiting on casing.

In Bandera County, P. H. Von Winkle's (formerly F. A. Brown's) R. B. Watson 1, Section 70, is fishing at 350 feet.

In Bastrop County, American Liberty Oil Company's L. Davis 1, Stovall Survey, is drilling at 400 feet. Bastrop Oil Company's Frietag 1, P. Conley Survey, has a sand at 2188 feet and is testing. Marts & Beavens' Smith 1, J. Burleson Survey, is drilling at about 2000 feet. Nelson Pruitt's C. Lentz 1, J. B. Lentz Survey, is moving on. H. Robertson's Schmidt 1, D. H. Dyer Survey, has spudded and is standing.

Bee County

In Bee County, CR & M and O'Neill's Stolzfus 1, Ragley Subdivision, Uranga Grant, set 400 feet of surface casing and is waiting on casing. Grisham et al's A. J. Hill 1, Section 11, W. G. Ragley Survey, is drilling at 3220 feet. Gulf Coast Oil Company's Hicks-Hall 5, Block 2, Uranga Survey, Normanna, encountered a sand at 3616-21 feet, with a total depth of 3622 feet, and the well started flowing, indicating a small well. C. F. Nichols' J. P. Harris 3, NW NE NW of Section 13, Tuleta, had sand at 4102-12 feet showing gas, deepened to 4300 feet, and set casing on top of the Yegua sand. Nichols & Bruner's Hedefels 1, John Ryan Survey, was drilling below 2700 feet at the last report. Pettus Oil and Gas Company's Mauldin 1, Kerr Survey, is a location. Tabor, O'Neill & Howeth's J. P. Harris 1, Block 13, Section 13, had a sand at 4315-22 feet, which tested 11 fourbles of oil, four fourbles of brackish mud, and 100 pounds pressure in 10 minutes on a one-fourth-inch choke on top, and a half-inch choke on bottom, and then set casing. Titus & Calloway's Dirks 1, Uranga Grant, Tuleta, is moving on.

In Bexar County, Chiquita Oil Company's A. C. Hunter 2, Section 14, J. Martinez Survey, is drilling at 1280 feet. Eckert & Son's L. Brehm 5, No. 58 Boquar Survey, is drilling at 400 feet. Gatlin Oil Company's I. A. Beck 15, J. Montez Survey, is drilling at 600 feet. Robert C. Hill & Scruggs' F. Schell 1, Section 234, Perretaux Survey, total depth 836 feet is testing R. V. Hill's Boeck 1, Section 314, J F. Shepherd Survey, total depth 399.4 feet, is testing. M. E. Trussell's R. T. Pruitt 1, County Block 4299, is drilling at 620 feet. H. G. Venable's F. Dullnig 2, is testing at 1100 feet.

In Caldwell County, Bobrose Oil and Refining Company's Walker 2-B, S. Seal Survey, at 2372 feet, is standing with 1500 feet of oil in the hole and is completing. Slam Bang Construction Company's W. T. Mooney 1, S. Seal Survey, total depth 2240 feet, is swabbing. E. L. Hope & Joe Cole's M. August 1, A. Floyd Survey, is preparing to spud. H. W. Kemp's George Vickery 1, S. Damon Survey, is preparing to test after plugging back from 2000 to 1750 feet. Jimmie Lanning's Barber 1, S. Damon Survey, is drilling at 2300 feet. Webster Oil and Gas Company's McMahon 1, James Pinchback Survey, is coring at 2156 feet.

Duval County

In Duval County, Buchanan et al's Sling 1, Survey 118, is a derrick. Byrd Oil Corporation's P. T. Wright 4, Section 101, is a derrick. Capps & Smith's Duval County Ranch 3-A, Section 574, set casing at 2284 feet and is waiting on casing; Duval County Ranch 4-A to 7-A, inclusive, Section 574, are locations; Duval Ranch 4, Section 576, is a derrick. W. R. Peters 1, Section 178, has spudded; J. E. Williams 1, Section 7, Block 1, is a location. Central Producers, Incorporated's, Johnson & Tuck 4, Section 44, is a location. W. T. Daniels' F. J. Smith 1, Section 44, is drilling at about 2100 feet. Hamill & Hamill's C. W. Hahl 5, Section 42, is a derrick; C. W. Hahl 6, Section 42, is a location; C. W. Hahl 7, Section 42, a location; C. W. Hahl 8, Section 42, a location. Highland Oil Company's A. Lundvall 4, Section 42, has spudded. John Hornbeck's Duval County Ranch 1, Section 281, is derrick. Humble Oil & Refining Company's Paul White 9, Section 58, is a location; C. W. Hahl 1, Section 74, is drilling at 700 feet. Magnolia Petroleum Company's J. V. Allen 2, Section 42, is reaming under; J. T. Johnson 6, Section 42, is a location; Hahl-Riley, Section 45, a location; G. Wendt 12, Section 42, a derrick. Newton et al's Wood-Welder 1, Section 102, is a location. Payne & Vernon's A. Roach 1, Block 7, Section 457, is reaming under. L. F. Russ' C. W. Hahl 3-B, Section 45, is a location. SR & C Oil Corporation's Duval Ranch 1, Section 192, is a location. San Diego Oil Company's L. Bennett 2, Section 44, is completing at 2306 feet. Sarnosa Oil Company's A. Weil 3, Section 130, with a total depth of 2421 feet, flowed a small amount of oil and is swabbing. Weil 4, Section 130, is moving on; A. Weil 5, 6, 7, 8, 9, Section 130, are all locations. C. P. Scott's J. W. Kidd 1, Section 56, is drilling at 1800 feet. Wilkins Seacord's Lundell 1, Section 60, is a derrick. Southwest Drilling Company's R. Wendt 4, Section 43, set casing at

2284 feet and is drilling in. Stanley Smith's Pena 1, Section 79, has spudded. Sun Oil Company's Duval Ranch 1, Section 78, will plug back from 2386 to 2165 feet and complete as a gasser. Texas Company's C. W. Freer 1, Section 45, has spudded; C. W. Freer 2, Section 45, is a location; W. C. Riggs 3, Section 46, is moving on. Whisenant-Trenchard & French's C. W. Hahl 5, Section 44, has spudded.

In Frio County, Amerada Petroleum Corporation's Halff & Oppenheimer 1, W. F. Halsel Survey, topped Taylor marl at 5060 feet and is drilling.

In Goliad County, Gulf Production Company's O'Conner 3, is a location. Sam Vanderweiss' Kaufman 1, Ramos Survey, is reaming under.

In Gonzales County, A. King's F. Ramzinski 1, Gonzales Survey, is a derrick.

In Guadalupe County, Suttle et al's Halm 2, Jose Kent Survey, is drilling at 1900 feet. Walton et al's Dan Darlind 1, Ben Fuqua Survey, is drilling at 400 feet. A. W. Wormser's Harris 1, Dewitt Survey, is a derrick.

In Jim Hogg County, Clark & Cowden's W. Allen 1, Section 49, is drilling at 3015 feet; Vela 2, Section 588 is a location.

In Jim Wells County, Humble Oil & Refining Company's Furhman 1, P. Sacks Survey is reaming under.

In Karnes County, A. E. Edmiston's G. W. Cross 1, M. N. Reed Survey, has spudded.

In Kerr County, Eastland Oil Company's J. Love 1-C, Section 1595, is drilling at 1425 feet. Van Duyn & Moore's R. W. Nowlin 1, No. 99, J. Bettner Survey, set 515 feet of 6⅝-inch casing and is drilling at 525 feet.

In Live Oak County, Live Oak Petroleum Company's Jim Harper 1, J. Poitavent Survey, is drilling at 1750 feet; M. W. R. Company's W. C. Ohlendorf 1, Block 25, SGI Survey No. 336, is drilling at 750 feet.

In McMullen County, Capps & Baker's Hagist 1, Section 6, J. W. Osborne Survey, is a derrick. Howeth & O'Neiol's Rhodes 1, Section 30, Rhodes ranch, is a location. Jacob, Buzzini & Pickett's Jacob 8-A, W. H. Jacob Survey No. 8, is drilling at 1450 feet; Jacob 10-A, W. H. Jacob Survey No. 8, set casing at 954 feet and is drilling out plugs. Long Horn Oil Company, Trustee's, Lark 2, E. W. B. Scrugham Survey, is a derrick. J. A. Tarver's J. Dickinson 1, No. 45 Survey, is a location.

In Medina County, Moore, Richey & Clifton's Reicherzer 1, near LaCoste, spudded and set surface casing.

In Milam County, Kyser & Roberts' Ward 3, Levi Taylor Survey, is redrilling at 1810 feet. Marvel Wells, Incorporated's Fee 1, J. J. Liendo Survey, is a derrick. Union Commercial Oil Company's Terry 1, Jose Leal Survey, is drilling at 2460 feet.

In Nueces County, Capps & Smith's Hutchins 1, George Frank Survey No. 416, is coring sand at 3816 feet. Gibson Oil Company's R. Morgan 1, Section 405, is drilling at 4580 feet. Gulf Coast Oil Company's Perkins & LeGasse 2, Section 26, a gasser at 4887 feet, will kill to workover. Gulf Port Oil Company's Iscencee 2, Charles Land Survey No. 404, is drilling at 3580 feet. Houston Oil Company's Walton 1, Section 9, is running casing; the new total depth is 4075 feet after plugging back from 5003 feet. Titus & Calloway's Perkins & LeGasse 1, Block 26, set casing at 4557 feet and is drilling out plugs; Perkins & Legasse 2, Block 25, has a sand at 4550-66 feet which is showing lots oil and is waiting on cement; K. Hutchins 1, Block 30, is drilling at 4470 feet.

In Refugio County, Gulf Production Company's O'Conner 2, a gasser 5704 feet, is reaming under to deepen. Humble Oil & Refining Company's O'Conner 3, F. Rios Survey, started making salt water at 3148 feet and has been deepened to 3303-11 feet where a sand is being tested; O'Conner 4 is a derrick.

In San Patricio County, Saxet Oil Company's Rachel 19, White Point, is reaming under.

In Starr County, Austin & Reynold's Kelsey Bass 1, Section 4, Porcion 75-76-77, is preparing to spud. B. & B. Oil Company's Kelsey Bass 1, Porcion 87, is shut down at 3125 feet. Bryan & Thorp's A. Guerra 1, Block 6, San Jose Survey, is a location. Goodwin & Yantis' Seaburg et al 1, Section 3, is drilling at 960 feet. Great Plains Oil Company's Sanches 1, Section 344, set 100 feet of surface casing. Hooks & Weaver's Kelsey Bass 11, Section 6, Porcion 75-76-77, is moving in rotary for 3000-foot test. Jeffries Lambert Drilling Company's Starr County Cattle Company 1, Block 34, Porcion 89, is re-drilling at 1600 feet. Keck & Keane's Kelsey Bass 1-A, Porcion 6, is drilling at 600 feet. Los Olmos Oil & Gas Company's Kelsey Bass 42, Section 7, is moving on; Kelsey Bass 43 to 46, inclusive, Section 7, are locations. Moore & Jenkins' Seabury 1, Section 5, Porcion 7, set 69 feet of surface casing and is waiting on cement. Sinclair et al's Kelsey Bass 2, Section 5, is drilling at 276 feet. E. H. Stickney's H. Gonzales 1, Section 399, has spudded.

In Victoria County, Gulf Production Company's Keeran 3, M. de Leon Survey, is drilling at 5400 feet. Houston Oil Company's Beck 2, Lot D, IRy Survey No. 26, is drilling at 4715 feet. Quintana Petroleum Company's J. Welder 1 is moving in materials. Slick-Seeligson's McFadden 2, J. Varin Survey, plugged to 5180 feet and is drilling in. The Texas Company's A. M. McFadden 5, McFadden Survey, is drilling at 2000 feet. Union Oil Company's Keeran 2, M. de Leon Survey, had a sand at 5495-5505 feet which tested 500 pounds pressure in 10 minutes on a one half-inch choke on top and a one quarter-inch choke on bottom, getting two gallons of gasoline in the testing tool; the well will ream down and test again.

In Webb County, Syck Oil Company's Garcia & Villereal 1, Section 1100, drilling at 1800 feet. Milam Drilling Company's Duval Ranch 1, ZCSL Survey No. 3, is a location. Montex Petroleum Company's Rosenburg 1, Block 5, Section 271, at 2239 feet made oil well, sanded up and will clean out. Sal Mar Oil Company's Vela 1, Block 16, Section 1011, has spudded. South Texas Oil Company's Laurel 4, Section 270, Block 9, is drilling at 2000 feet; Laurel 5, Block 9, Section 270, is drilling at 510 feet.

In Zapata County, Murray et al's S. Vela 1, Block 145, Share D, Doty subdivision, is a location. Newton et al's Flores 1, Survey 49, had a sand at 1260 feet which tested dry, and will core deeper.

In Zavala County, Adair and Daniels' Gates 1, Section 13, is drilling at 3515 feet.

Saxet Production Boosted; Wells Showing Favorably

San Antonio, Texas.—Several wells, including one work-over, boosted Saxet field, Nueces County, production. Gulf Coast Oil Company's Bessie Elder 2, Block 29, is making 130 barrels at 4554-64 feet after being worked over. Saxet Gas Company's J. Dunn 9, E. Villereal survey, is flowing about 103 barrels from 4070-82 feet.

Several wells have interesting showings. Gibson Oil Company's R. Morgan 1, Survey 405, tested 400 pounds dry gas in three minutes from 4680-88 feet and is going deeper. Perkins & Legasse 2 of Gulf Coast Oil Company, Section 26, which is a gasser at 4887 feet, is being killed to deepen. Gulf Port Oil Company's Insencee 2, Survey 404, is in a gas sand at 4065 feet. Houston Oil Company's Walton 1, Section 9, is waiting on cement at 4075 feet after plugging back from 5003 feet. Titus & Calloway's Perkins & Legasse 1, Block 26, is rigging up Christmas tree at 4557-69 feet, while Perkins & Legasse 2, Block 25, is listed as waiting on cement at 4550-66 feet. Same operators' K. Hutchins 1, Block 30, is coring a sand at 4533, showing some oil. All of these wells should be on production within the next week or so.

Danciger Announces Second Cedar Break Test Location

Houston.—The second of five or six tests to follow Danciger Oil & Refining Company's discovery well in the Cedar Break, or Pledger, area of Brazoria County, was designated December 9 as W. S. Hunt 2, located 1000 feet northeast of the discovery well, which is still shut in at 6782 feet with a pressure in excess of 2500 pounds.

Saturday the well blew out, nearly killing Superintendent Bill McIntyre, who came out of the affair with a lacerated eye, a broken ear drum, and minus shirt buttons and shirt pocket bottoms. Mr. McIntyre was trying to close a 3000-pound test valve which had begun to frost from passage of casinghead gas when it exploded.

Plans of the operators are to lay a couple of lines from the well to a remote control point about 100 feet from the derrick. The plan contemplates use of expansion chambers and pressure step-downs so production of the well can be handled without ruining connections. Until such time a definite idea of the well's capabilities can not be obtained, although it did produce at the rate of 150 barrels of distillate before the shut-in was necessary.

Operation of the Cedar Break prospect, where apparently Danciger has opened a new pool, will be conducted in a conservative manner, Joe Danciger, president of the company, said in Fort Worth this week.

"We are starting a second well shortly and will drill five or six wells, but we expect to do it in a conservative manner," Mr. Danciger said. "We expect to conserve gas pressure and to operate the field as efficiently as possible. We realize we have been very fortunate at Pledger. Hitting the pay in our first well there was real good fortune."

Danciger Oil & Refining Company has 3350 acres under lease at Cedar Break with the discovery well near the center of the tract.

More Drilling Needed On Ariola Prospect

Houston.—Present indications are that additional drilling will be necessary on the Ariola dome in Hardin County if that area is to be made commercially profitable. As shown in the accompanying story on Gulf Coast wildcat activities, the drilling wells at Ariola are all well below the depth at which Republic Oil Company and Houston Oil Company's Ariola Fee 1, discovery well, was completed.

After the discovery well was brought in at 4157 feet for 320 barrels net oil, representing 40 per cent of the well's fluid output, the same operators completed

Houston. — Cullen and West's Hawes 1, Wharton County wildcat located about a mile northeast of Hungerford and close to the Fort Bend County line, was drilling below 5130 feet Friday; was in the Frio at 5000 feet, and had topped the Oligocene around 3900 feet, according to reports.

Ariola Fee X-1 as a failure in salt at 4267 feet. This well was located 1500 feet east of the discovery well.

Then they abandoned Ariola Fee 2, located about 2800 feet north northwest of the discovery well, at 5980 feet after recovering six fourbles of a lost drill stem.

Geophysics No Aid in Locating Sun's Wildcat

Houston.—Sun Oil Company's R. W. Theuman 1, Austin County wildcat located a mile north of Cat Springs, is the first test in the Gulf Coast in quite a while that based its location purely on surface indications and geology. Conditions in the region were such that no reflections could be obtained from use of geophysical instruments, although their use was attempted.

Theuman 1, which set 213 feet of 13-inch casing this week and is waiting for the cement to set, is near the center of a block of more than 5000 acres assembled by the Sun Oil Company. Situated in the Juan de Leon Survey, it is 990 feet from the northeast line and 924 feet from the northwest line of the Theuman 125-acre tract.

A break in the 210-mile, 26-inch gas line of Southern Fuel Company from Kettleman Hills to Long Beach, California. Contraction stresses due to cold weather and the 250-pound pressure still leave reasons for the break undetermined, according to A. F. Davis. The men are standing near a point in the line welded by the shielded arc process, utilizing Fleetweld electrodes.

Oil Well or Abandonment Soon From Cheek Wildcat

Houston.—If production is not encountered in the next 630 feet in Jack Schultz's O. M. Todd 2, wildcat well on Cheek dome in Jefferson County, it is likely the well will be abandoned. Friday Todd 2 was drilling in the marginulina at 6870 feet with the operators of the opinion that if there is an oil sand to be found in that part of the Carr Survey it should be found before 7500 feet is reached. Present opinion seems to be the well was located a little too far to the south with respect to Todd 1, which is 1800 feet north.

Pure Will Drill Louise Block in Wharton County

Houston.—Pure Oil Company's large block of acreage near Louise in Wharton County is to be given a test for production soon as rigging up is scheduled to start immediately on a location announced Friday as 2419 feet northwest and 1650 feet northeast from the south corner of Section 25 of the Morris Cummins Survey. The well, to be known as Stewart 1, is on the 160-acre tract known until this week as the D. E. Miller tract.

Ouster Suit Testimony Recessed Until January 3

Austin, Dec. 9.—Further testimony in the ouster proceedings against major oil companies in Texas will be taken January 3. The hearing was recessed today over the protest of James V. Allred, attorney general, in order to allow W. R. Boyd, Jr., executive vice president of the American Petroleum Institute, to regain his health. Mr. Boyd has testified intermittently for five weeks. Since the meeting of the A. P. I. he has been convalescing at his farm home near Teague. Defense attorney sought the recess.

Austin, Texas.—A hearing on physical waste in the Conroe field, Montgomery County, was set by the Texas Railroad Commission for December 21.

The method of allowable and the amount per well will be considered at this time together with all other factors involved in handling the conservation orders in force in the field.

Exploration in Texas Gulf Coast Wide-Spread and Thorough

Houston.—Some idea of the thoroughness of attempts to prove geophysical propects and other areas considered likely for oil in the Texas Gulf Coast may be gathered from a survey of wildcat activity in the area December 9 which revealed 95 listed wildcat operations scattered over 27 counties comprising most of the area. Of these 95 operations, 45 were listed as actively drilling or actively fishing, and 27 were classed as "legitimate" shutdowns, four were rigs and 11 were locations and derricks.

While interest is centered mainly on trend plays generated from recent commercial developments resulting from wildcats in Montgomery, Polk, Matagorda and Brazoria Counties, of particular interest this week was the abandonment of Republic Production Company and Houston Oil Company's Ariola Fee 2, at Ariola, a geophysical prospect in Hardin County. Drilling stopped at 5980 feet after the operators had recovered six fourbles of drill stem. The other abandonment was also a Hardin County wildcat, being Charles Peggi's J. L. Hooks 1, which was abandoned at 1740 feet in sand. This latter test was in the Theodore Slade Survey, five miles south of Selsby, and was not deep enough to condemn the prospect.

Near Raccoon Bend field in Austin County, Callicott et al are drilling below 3100 feet on Chesley 1. Twelve miles southwest of Raccoon Bend, C. B. Bunte, Incorporated's, Leo Dittert 1, in the M. N. Allen Survey, is standing after having rigged up last week. Great Southern Oil Company, which has had rather a difficult time with F. Schovajsa 1 in the Dougherty tract of the Stephen F. Austin Four Leagues grant three miles south of Bleiblerville, is rebuilding the derrick as result of a windstorm which destroyed the original one when the wildcat had reached 2876 feet. Sun Oil Company, contemplating a test of production possibilities of the region two miles west of Kinney and one mile north of Cat Springs, Austin County, has set 213 feet of 13-inch casing in Theuman 1 in the Theuman 125-acre tract in the Juan de Leon Survey. Tibbett et al, trying to connect the shoreline trend up with Brenham production, have erected a derrick 2½ miles southeast of that field on a 215-acre tract in the E. M. Kuykendall Survey for a test to be known as Lindeman 1. Yegua Oil Corporation, putting down a deep test in the Brenham area, where production is obtained from the 1200-foot horizon, are losing returns in a rock cavity at 1515 feet. The well, known as Pomical 18, is in the S. M. Williams Survey.

Brazoria County, which houses more than half a dozen productive fields already, was one of the focal points of Gulf Coast interest during the week due to the showing made by Danciger Oil and Refining Company's W. S. Hunt 1, on Pledger, or Cedar Break prospect. The well is showing for a producer or a gasser at 6782 feet, bottom of a sand capable of building up a pressure of 2525 pounds on the gauge and of spraying what appears to be high gravity oil. Location for Danciger's W. S. Hunt 2, has been made 1000 feet northeast of No 1. In the same county Gulf Production Company's American National Insurance Company 1, located on what is known as Sandy Point prospect, is drilling past 5570 feet without having recorded any significant showings. Gulf's prospect at Lockwood, midway between Damon Mound and West Columbia, was reported drilling below 6180 feet. In the southeastern part of Brazoria County, near the Galveston County line, A. H. Parsons et al, were reported cutting shale below 4254 feet in J. D. Hughes 1, in the A. L. D. Lewis Survey. W. D. Southerland et al's C. W. Chapman 1, another Sandy Point prospect well, but located in the Andrew Robinson Survey, was tied up with a fishing job in hard sand at 5787 feet. In the vicinity six miles southwest of Alvin, Tri-Fin Oil Company reported Moers 1, standing in hard shale at 2782 feet. While Manvel dome in Brazoria County was classed as productive last year, wells drilled there are still considered more than semi-wildcat, and in this connection, The Texas Company has made location for Belcher 4 at Manvel in the H. N. Little Survey, 2900 feet south and 400 feet east of the north corner of the Belcher lease.

There are only two wildcats in Brazos County: Adkins and Catlett's Williams 1 is drilling below 277 feet, and Dew, Dickerson and Wicklyne's Moseley 1, located in the W. Mathis Survey, is shut down at 1052 feet after having reported a showing of gas.

Bordering Brazos County, but over in Burleson County, three wells have passed the 2000-foot mark. Poor Boy Oil Company's Polansky 1, located six miles west of Lyons in the Freinstadt neighborhood and in a 158-acre tract in the M. B. Lawrence Survey, is standing in shale at 2306 feet. Shilo Oil Company's Bracey 1, in the J. Lastly Survey, Somerville district, is shut down in sandy shale at 2231 feet. Sanson Oil and Gas Company's Duckworth and Gilley 3, in the P. Singleton Survey near Clay, is standing in water sand at 2652 feet.

Chambers County, which has contributed little to news of the Gulf Coast during the past year outside of field developments at Barbers Hill and Lost Lake, is the location of two interesting tests. In the northeast corner of the county Yount-Lee Oil Company is drilling well below 4000 feet in Sophie Plummer 1, located in the survey bearing her name. In the John Ijams Survey, Weaver and Ray have passed 2400 feet in Fisher 1.

Colorado County wildcat developments were featured this week by announcement to the effect that L. E. Hults, who holds a 5000-acre block on what is known as Garwood dome, located three miles southwest of Garwood, probably will start a test on the block soon. Neuhaus et al's M. C. Barnett 1, located in Block 26, K. Winn Survey, was drilling in shale below 5185 feet. Pilot Oil Company's Tait 1, 1½ miles north of Altair, and in the Cook and Dewees Surveys was reported as having shut down at 1100 feet to cure titles after having had a gas blowout at 630 feet.

Fort Bend County, prominent during 1931 because of developments at Rabb Ridge field, has several important wildcats. Three miles southwest of Big Creek dome Lynch et al have shut down Kneitz 1 for repairs at 674 feet after having set 90 feet of 10-inch casing. Naylor and DeCosta's Naylor 1, located 1½ miles north of Thompson Station, in the vicinity of Rabb Ridge,

is standing in hard shale at 7014 feet, while Reisinger's Joe Sitta 1, in what is known as the Long Point district, is reported to be preparing to test an oil sand at 1602 feet.

One of the deepest wildcats on the Texas Gulf Coast is Humble Oil & Refining Company's Elias V. Rosenkranz in Galveston County. This wildcat, testing production possibilities of Green's Lake prospect, is washing and reaming with a total depth of 7119 feet while preparations are being made to fight heaving shale with a special mixture of acids.

In Grimes County, in the northeastern part of the county and west of Iola, J. C. Barnett's G. W. Dodd 1 is standing at 2695 feet after a drill stem test of the Timothy Jones Survey wildcat flowed salt water in nine minutes. This operator has erected a derrick on the Thomas McDonald Survey. W. J. Brightwell, another Grimes County wildcatter, is shut down at 5016 feet in water sand on J. A. Combs 1, located in the Samuel Beauman Survey of the Bedias district.

At Weiss Bluff, six miles east of Ariola prospect and in Hardin County, Republic Production Company and Houston Oil Company are reported to have plugged Ben Andrews Fee 1, at 7420 feet after having passed through all horizons likely to have produced. R. Robichaux, drilling McShane 1 in the Benjamen Hawkins Survey on what is known as Votaw prospect, has shut the well down in shale and sand at 3030 feet. At the Ariola prospect of Hardin County, Gulf Production Company is drilling below 6730 feet in Kirby Lumber Company 1, located in the Eduardo Ariola Survey about one half mile northwest of Houston and Republic's Ariola discovery well. Houston and Republic's Ariola Fee Y-1, offset to the discovery well, passed through a water sand at 4614 feet, sand and lime at 4720 feet and was drilling rock at 5000 feet. Their Ariola Fee Z-1, about 2800 feet south southwest of the discovery well, is drilling below 4800 feet after having plugged back from 4220 feet to 3310 feet. Joe Proctor et al's J. R. Bevil 1, situated 1½ miles west of Sour Lake dome and in the William Young Survey, is drilling at about 500 feet after having plugged back from 2685 feet.

Over in Jasper County, across the Neches River from Houston Oil Company and Republic Production Company's Ben Andrews Fee 1, which was plugged at 7420 feet this week, Gulf Production Company was delayed with a stuck drill stem at 6894 feet in Miller Vidor Lumber Company 1, located in the northwest corner of the Sarah Gray Survey, but has recovered it and drilled to nearly 6970 feet and abandoned. Houston Oil Company's Richardson Fee 1, in the Richardson Survey of Jasper County near Evadale, at last reports was drilling near 6700 feet, with shale and lime having been logged at 6560 feet.

In Jefferson County, three miles northeast of Port Arthur and in the Joseph Grigsby Survey, Coast Oil and Gas Company has shut down J. O. B. Young 1 at 3415 feet in shale, while Jack Schultz, drilling a second test on the O. M. Todd land overlying the Cheek dome prospect, is drilling below 6870 feet, where ringtail shale was cored in the marginulina.

The only wildcat in Liberty County which has been active lately is Leon Brisley's J. M. Neal 1, located three miles south of Davis Hill in the E. Tanner Survey. It is shut down in shale at 2710 feet.

H. C. Cockburn's test on Sheppards Mott dome in Matagorda County is drilling below 3200 feet after having recorded a gas show at 1608 feet, lignite at 2200 feet, and hard lime rock at 2980 feet. Humble Oil & Refining Company's Pierce Estate 1, Isaac Foster Survey, had sandy shale at 3644 feet. Rugeley et al's Cleveland 1, one mile west of Bay City in the E. Hall Survey, was reported standing at 1502 feet.

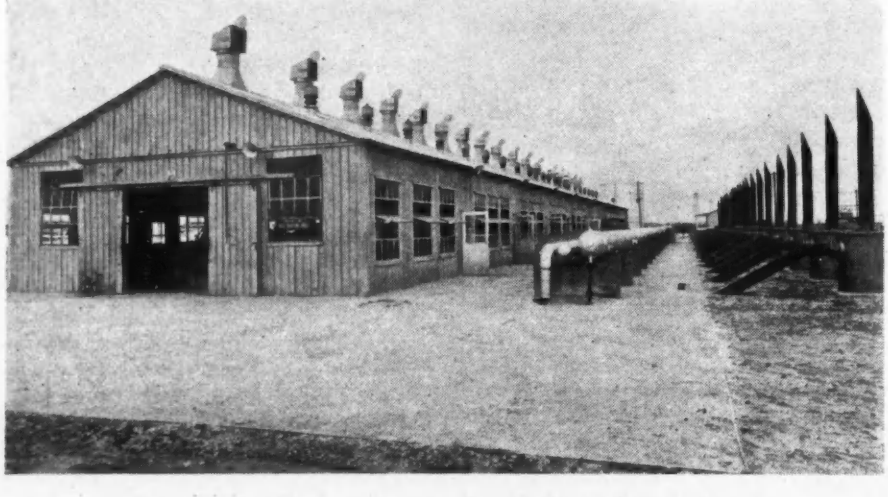
In Montgomery County, rendered conspicuous this year because of Conroe field, C. J. Daniel's Flowers 1, located in the W. Barker Survey in the southern part of the county, is standing in shale at 540 feet. In the J. Kronkite Survey, A. H. Parsons is reported drilling below 3000 feet in Drought 2. Sutton and Hawkins, drilling T. S. Foster 1, in the Jose Maria de la Garza Survey, is waiting orders at 3849 feet, contemplating starting up soon.

Four miles northeast of Bleakwood in the N. B. Lewis Survey of Newton County, L. A. James has passed 3000 feet in Price and Bevil 1, having reported no shows to date.

In the E. Hurst Survey No. 15, Orange County, Houston Oil Company and Republic Production Company have passed 5000 feet in E. Hurst 1, while E. L. Smith Oil Company's Miller-Vidor 1, another Orange County test but in the J. W. Swisher No. 3 Survey, was reported drilling below 6210 feet.

Polk County wildcats have attracted considerable attention because of Dick Schwab's discovery eight miles south of Livingston. Joseph L. Anderson et al's E. I. Duke 1, prospect well of Ace dome, Peter J. Menard Survey, is shut down in shale at 3937 feet. Ace Oil Company's Martha Roberts 1, another Ace dome test, but located in the Joaquin F. de Rumayor Survey is drilling below 4200 feet. Knock and Stephenson's R. H. Root 1, Lawrence Castillian Survey of Polk County, at latest reports was drilling shale at 2655 feet. Dick Schwab's Davis Holmes 1, 1050 feet west southwest of Carlton Davis 1, discveovery well, and in the R. D. Munson 25-acre tract of the Augustine Viesca Survey, is shut down at 4448 feet in sand and shale after failing to make a commercial producer and will be plugged back to 4433 feet for another attempt at completion.

In San Jacinto County, Darby, Jones and McBee Drilling Company are drilling below 1520 feet in shale in J. R.



Repressuring Plant at Raccoon Bend, Austin County, Texas

Bennett 1, located northwest of Cold Springs. In the southern part of the county in the James W. Robertson Survey, Weaver et al were drilling in shale and lime at 1290 feet in Delta Land and Timber Company 1.

In Trinity County, C. M. Becker et al's J. B. Gibson 1, William Beardsley Survey, has a showing of gas in a sand at 935-1032 feet, and has set 81 feet of perforated pipe. Total depth of the wildcat is 1042 feet. South Gulf Oil Company's Trinity Lumber Company 1 has spudded and shut down.

In Tyler County Republic Production Company and Houston Oil Company are rigging up to drill a test in Section 17 of the BBB&C RR Survey, about three miles west of their Sterne Fee 1, discovery gas well of the Spurger area. At last available reports, the attempt to deepen Sterne Fee 1, Adolph Sterne Survey, from its original completion depth of 4708 feet had progressed to below 5250 feet. Their Kirby Lumber Company 1, located 1000 varas northeast of Sterne Fee 1, but in the E. Thompson Survey, is a derrick, as is their Sam Jeffcoat 1, located 650 varas northwest of Sterne Fee 1.

Walker County's lone wildcat, Howard and R. Dooley's Smithers Brothers 2, is shut down in shale at 1915 feet.

In Waller County, Bunte and Hobson's Joe. W. Harris 1, located in a 1475-acre tract in the Justo Liendo Survey near Prairie View, is shut down for a drill stem test at 4887 feet.

Wharton County, recently given a strong lease play and subsequently subjected to several interesting tests, is the scene of six wildcat operations. Cullen and West's Hawes 1, one mile northeast of Hungerford, is reported drilling below 5130 feet where it logged sandy shale. Their Hudgins 1, located southwest of Hungerford and in the Alexander Jackson Survey, was drilling below 5000 feet. Dayvault, Tyler and Gardner have spudded in on a test located in the Dayvault 298-acre tract in the Williiam Kincheloe Survey. Laura Hahn 1, wildcat test being put down by Gant and Teas in the region 14 miles north of El Campo, N. Mancha Survey, has a collapsed drill stem at 5555 feet. Smith and McDaniel's Mitchell 1, 2½ miles northeast of El Campo, may give Wharton County its next field, having shown domal indications since 3000 feet and still showing such below 6236 feet. Stead Production Company is rigging up on Lurker 1, a well which will test the Leech dome prospect of Wharton County.

Conroe Leads Gulf Coast in Completions; Perfect Score

Houston.—Texas Gulf Coast completions recorded a higher than average individual initial production this week when 16 oil wells out of the 19 completions listed yielded a total of 20,012 barrels, or an average of better than 1375 barrels per well. Of the three dry holes, two were wildcats and the third was a deep test in old Sour Lake field.

Conroe field headed the list of contributors, making a perfect score with seven producers out of seven completions which averages better than 2000 barrels each. Rabb Ridge ranked second in volume of flush contributed with three wells totaling 4536 barrels.

A detailed list by fields, and by counties where wildcats appear, follows:

Company, Well and Location	Initial Production Bbls.	Depth
Ariola—		
Republic Prod. Co. and Houston Oil Co., Ariola 2	*	5980
Conroe—		
W. B. Hamilton, Moorehead 2	4104	5110
Humble Oil & Ref. Co., Alexander B-1	2616	5124
Alexander C-1	1008	5166
Maurice Hirsch 1	2880	5148
Madeley 2	1416	5154
McDonald Heirs 1	2472	5160
Moore & Bruton, W. N. Hooper, Jr., 2	1080	5119
Hardin County—		
Charles Peggi, J. L. Hooks 1, NWc Thomas Slade Sur..	*	1740
High Island—		
Yount Lee Oil Co., Broussard & Orme 2	100	5173
Cade 32	440	5255
Humble—		
Sun Oil Co., River 65	300	1374
Mykawa—		
Crown Central Oil & Gas and Framar, Minnetex 2 (wo)	320	4893
Rabb Ridge—		
Humble Oil & Ref. Co. and Gulf Prod. Co., Lockwood 6	1560	5300
F. I. Booth A-7	1488	5250
Gulf Prod. Co., Edwards & Riggins 1	1488	5271
Raccoon Bend—		
Humble Oil & Ref. Co., Woodley 8	586	3610
Sour Lake—		
Houston Prod. Co., Merchant 1	*	5560
South Liberty—		
Mecom Oil Company, Barrett 1	154	3694

Comparison of New Gulf Coast Allowables With Latest Actual Production Before Orders

Field	Production as of Nov. 26	Allowable Ordered Nov. 29 and Dec. 7**
Barbers Hill†	19,250	¶18,100
Goose Creek†	3,650	3,200
Sugarland†	8,200	¶8,000
Rabb Ridge (Thompson)†	10,100	10,000
Pierce Junction†	4,350	4,700
Conroe	16,200*	¶20,000
High Island†	5,050	¶6,500
Hull†	5,300	5,500
Humble†	5,500	5,125
Spindle Top†	3,150	2,700
Raccoon Bend†	4,300	¶4,500
Sub Total	85,450	88,325
Batson	750	675
Big Creek	1,100	1,170
Blue Ridge	900	765
Boling	400	270
Damon Mound	600	360
Esperson	1,300	1,440
Fannett	300	450
Hankamer	1,800	1,710
Manvel	700	540
Moss Bluff	100	90
North Dayton	150	180
Orange County	1,200	1,170
Orchard	1,700	1,260
Port Neches	2,100	1,530
Saratoga	800	720
Somerville	1,250	990
Sour Lake	1,750	1,575
South Liberty	900	855
West Columbia	3,450	3,150
Others	5,400	5,670
Sub Total	26,650	24,570
GRAND TOTAL	112,100	112,895

*Conroe subsequently passed 64,100 barrels per day due to writs of error granted an operator opposing proration.

†Effective till April 1, 1933.

**All figures in lower table under this column represent 90 per cent of daily average production for week ending September 24 and are effective till April 1, 1933.

¶Special order issued Dec. 7.

New Wildcat Slated for Colorado County Dome

Houston.—Adjacent to the Coyle-Concord block in Colorado County, where a Coyle-Concord's wildcat gas well is shut in with 1700 pounds rock pressure, L. E. Hults of Fort Worth has assembled 5000 acres on what is known the Garwood dome and will drill a well thereon shortly. The block is three miles southwest of Garwood.

Arthur Coyle of San Antonio is reported negotiating with Humble Oil & Refining Company for sale of the Coyle-Concord block.

More Operators Interested In "Conroe Trend East"

Alexandria, La.—Sun Oil Company has leased 5000 acres from W. H. Lyons in Vernon Parish, Louisiana, for 10 years for 50 cents per acre and 50 cents per acre delayed rental. This block is centered in the south half of township 1 south, range 9 west, and is in the path of the eastern "Conroe trend" play across Central Louisiana.

Arkansas Natural Gas Corporation has started buying a few scattered leases in the play across Central Louisiana having taken some small tracts in Vernon Parish.

Barnsdall Oil Company is also reported making some surveys in this "play" but the exact nature of these or whether they have acquired acreage on an extensive scale is not known here. Other companies definitely known to be in this play through East Central Texas and South Central Louisiana on the east trend from Conroe for the Jackson-Cockfield contact play, include Humble Oil & Refining Company, Sinclair Prairie Oil Company, Shell Petroleum Corporation and Yount-Lee Oil Company. Humble's play extends across South Mississippi into Southwest Alabama.

South Louisiana Wildcats Include 12 Active Tests

Houston.—Coastal Louisiana wildcatting continues fairly active as the year draws to a close with 17 operations listed, of which there are 12 active tests, four tests shut down, and one location.

Rio Bravo Oil Company is rigging up on Gambler Lumber Company 1 at Darrow dome, in Ascencion Parish, to test out the nature of the production horizon at a point 600 feet west of the discovery well, which was completed at 4035 feet for an initial production of 100 barrels per hour.

Dr. T. W. Irvine's Mimms 1, wildcat in Section 20-9s-7w, Calcasieu Parish, was reported temporarily shut down at 2225 feet in sandy shale to repair pumps before resumption of drilling, while Texla Oil Company's Federal Lank Bank 1, the only other listed wildcat in Calcasieu Parish, was reported shut down in sand at 870 feet.

In Cameron Parish, at Cameron Meadows, Magnolia Petroleum Company is drilling in hard sand below 2285 feet in Cameron Meadows 3, a semi-wildcat in Section 21-14s-13w.

Iberville Parish

Standard Oil Company of Louisiana spudded Gay 3 at Choctaw dome, an Iberville Parish prospect which that company has subjected to considerable exploratory work, while preparations to spud were being made in Lechner and Hubbard's Lollain Lumber Company 1 in Section 32-18s-22e.

Cook Drilling Company's Delecroix 1, located on the Oliver prospect in St. Bernard Parish, is drilling near 2000 feet after having logged sand at 1862 feet.

Gueydan dome prospect, in Vermilion Parish, proven capable of commercial production this year by Pure Oil Company, is the scene of three active wildcats. Pure Oil Company's Alliance Trust Company 3 reports a sand showing oil at 4191 feet. This test last week reported another sand bearing oil at 100 feet above the present depth. The same operator's Mulvey Irrigation Company 2, another Gueydan test, is drilling below 1100 feet on a location offsetting Gulf Production Company's 161-acre Connor lease. Shell Petroleum Corporation is rigging up on B. C. Herbert et al 1, in Section 10-15s-1e, Gueydan, and probably will spud before the middle of the month.

The two wildcats listed in Vernon Parish are: B. E. Jones, J. J. Willis 1, a new location in Section 32-3n-9w, and Llano Company's Llano del Rio 1, drilling in shale below 3480 feet in Section 34-2n-9w.

Commission Fixes Monroe-Richland Quotas

Shreveport, La.—The new withdrawal quotas for the Monroe and Richland gas fields in North Louisiana for the next six months were announced last week by the minerals division of the Louisiana Conservation Commission, following compilation of the semi-annual re-gauge of these two gas fields.

In making public the quotas, Dr. J. A. Shaw, director of the minerals division, said:

"The quotas given are applicable only when the working pressure of any well is not lowered below one half of its rock pressure, except that when a well has a rock pressure lower than 100 pounds a working pressure lower than 200 pounds is not permissible. In those areas where the minimum required working pressure has been lowered from 200 pounds, the minimum required working pressure assigned by the Department of Conservation to that particular area shall apply."

T. W. Herring, drilling superintendent, Willow Springs, East Texas division, Yount-Lee Oil Company, illustrates what the well-dressed field man should wear.

Zwolle Wells Will Be Given Treatment With Acid

Shreveport, La.—Dowell Incorporated will give the acid treatment to five wells in the Zwolle field in Sabine Parish, Louisiana, owned by Pelican Natural Gas Company. The work will be in charge of J. R. Anderson in cooperation with Jones Chemical Company of Shreveport.

Negotiations are under way with Gibson-Johnson and Higgins, relative to giving this treatment to Frost Lumber Company 1, Section 19-9-13, Sabine Parish, the single commercial well at Converse, also in Sabine Parish. This well, completed pumping 40 barrels of 45.6 gravity oil daily, has dropped to 13 barrels daily on the beam. The marl horizon is similar to the marl at Zwolle which overlies the chalk there, except that the Converse marl is more sandy.

Atlantic Sells Last of North Louisiana Holdings

Shreveport, La.—Negotiations were closed last week for the purchase by Matrizky and Bibby of Homer, of 33 oil wells in the Homer field, with a daily production of approximately 110 barrels, from Reserve Petroleum Company, a subsidiary of Atlantic Oil Producing Company. The sale of this property marks the sale of the last of the Reserve's holdings in North Louisiana.

Eighteen miles of six-inch line between the Homer field and storage facilities near Haynesville, is being taken up by the Atlantic Pipe Line Company and the pipe sent to the East Texas and Conroe fields. Atlantic Oil Producing Company recently sold its Haynesville and Stephens, Arkansas, holdings to Ohio Oil Company.

Louisiana Has Failure Wave; Two Oil Wells at Zwolle

Shreveport, La. — Zwolle field continued to lead Northern Louisiana activity during the week, registering seven of the state's 11 completions and contributing both the week's oil wells. There were no completions in the Louisiana Gulf Coast during the week.

Pelican Natural Gas Company completed a 2½ million cubic foot gas well in Richland Parish, leaving the remaining eight completions as junked or dry holes.

A detailed tabulation of the week's completions follows:

Company, Well and Location	Initial Production Bbls.	Depth
Bienville Parish—		
Black Lake Dev. Co., Petty Stave Co. 1, 19-18-6w.....	*	2870
Bossier Parish—		
Plain Dealing O&G Co., Nattin 1, 15-22-14	*	2965
Caddo Parish—		
Caddo Prairie Dev. Co., Chas. Nichols 1, 10-22-15..	*	2320
Richland Parish—		
Pelican Nat. Gas Co., Noe 2, 11-17-5e . .....¶	2½	2423
Sabine Parish (Zwolle)—		
Clyde Cox, Sabine Lbr. Co. 1, 35-8-13	*	2400
Alexander & Mason, Cooper 1, 31-8-11	150	2434
C. L. Hamilton, Tr., Tilley 1, 30-8-12	*	2162
Paul L. Miller, Tr., Chadick 2, 32-8-10	700	2566
E. M. Self, Henderson 2, 31-8-10	*	2640
Jules Alford, M. Stoker 1, 10-7-11	†	2620
Crescent Drilling Co., Peters 1, 2-7-11	*	2615

New Wells in Louisiana Running Ahead of Last Year

Shreveport, La.—Eight permits to drill wells were issued in Louisiana during the week ending December 10, five of them being for new operations in Northern Louisiana and three for Coastal Louisiana operations. This brings the total permits for the state up to 414 for the year, compared with 309 issued during 1931.

The list of permits, by parishes, follows:

Caddo Parish, Bolinger & Walker, Plain Dealing, Mrs. Mattie C. Thompson 1, Section 16-22n-14w, 790 feet south and 140 feet east of the NW corner NW¼ SW¼ of the section.

Cameron Parish, Jim Oil Company, Lake Charles, Erwin 11, Section 13-12s-10w, 1000 feet north and 425 feet west of the SE corner NW¼ SE¼ of the section.

Plaquemines Parish, Freeport Sulphur Company, New Orleans, Cockrell-Moran 8, -20s-26e, approximately 13,675 feet north and 200 feet west of the NE corner of section.

Sabine Parish, Craft & Primm, Many, C. Alford 1, 18-7n-10w, 720 feet south and 460 feet east of the NW corner SW¼ NW¼ of the section. Riggs & Beals, Many, Bruce Darby 1, 21-7n-11w, 660 feet north and 100 feet east of the SW corner of the NE¼ SE¼ of the section. Paul L. Miller, Many, A. C. Chadwick 2, 32-8n-10w, 330 feet east and 109 feet north from the SW corner of SE¼ NW¼ of the section.

Terrebonne Parish, The Texas Company, Shreveport, Lake Pelto 8, 9-23s-18e, 928 feet south and 628 feet east of the NW corner of the section.

Union Parish, M. Smith McCurry, El Dorado, A. Dawkins 1, 27-23n-1e, 200 feet north and east from the SW corner of the section.

Bienville Block Assembled On Geological Evidence

Shreveport, La.—M. H. Marr and Associates who recently completed a 5000-acre block of wildcat acreage centering in Section 23-16-5w, Bienville Parish, assembled the block because a surface high mapped from the Minden-Sparta contact shows a 30-foot closure while subsurface contouring at the base of the Annona chalk shows an even greater amount, it is said.

This block is in a general syncline between the Monroe and Sabine Uplifts. Basal anhydrite probably is as low as 5600 feet.

Blossom Has Salt Water at Converse Same as Zwolle

Shreveport, La. — Definite evidence that the Blossom horizon carries salt water in the Converse field as well as in the Zwolle field both in Sabine Parish, was furnished last week when Sabine Production Company's Whitney Corporation 1, SW SW Section 4-9-13, tested salt water at 2184 feet in that level, after getting a strong gas show there. Base of the chalk was logged at 2050 feet. This test is designed for the 3100 foot zone.

Sandfield Company's Bowman-Hicks 1, NE NE Section 26-9-13, set liner and bailed dry after a show of live oil and gas in breaks in the base of the Annona chalk from 2200 to 2210 feet; elevation is 302 feet.

Gibson-Johnson and Higgins who apparently passed up a 25 to 30 barrel daily pumper in the 1500-1600 foot level in their Frost Lumber Company 2, Section 15-9-13, have deepened it to 1901 feet and set liner and are bailing drilling water and about 10 barrels of oil daily. This oil is said to have a different color and is one degree lower in gravity than the marl horizon oil at 1626 feet secured in Frost Lumber Company 1, Section 19-9-13, and which showed in that horizon in the present test. Some geologists think present depth of the well is in Saratoga chalk.

On Thursday, December 8, Barbare and Associates were bailing Ryals 1, NW NW Section 27-9-13, after drilling plug in six-inch casing; total depth is 1557 feet. Base of the Midway was logged at 1542 feet; elevation is 196 feet.

In Bienville Parish, Robt. S. Ross, Beck 1, NE NE Section 3-18-8w, was moving in rig.

In Bossier Parish, Steckol & Breazeale, Nattin 1, SW NE Section 15-22-14, has set six-inch at 2998 feet and is waiting on standard rig, depth 3028 feet. Steckol & Breazeale, Nattin 2, NW NE Section 22-22-14, is a derrick.

In Caddo Parish, Bolinger & Walker, Thompson 1, Section 16-22-14, is moving in rig.

In Claiborne Parish, A. W. Phillips, Trustee, Knighton 1, NE SE Section 31-20-7w, has materials on ground for a 5000-foot test. Webster Oil & Gas Company, Smith 1, Section 8-21-7w, is drilling at 1475 feet.

In De Soto Parish, Baggett Oil Corporation's Moore 1, NE NW Section 1-13-15, (formerly W. M. Pollock's Cook 1), is a rig. M. B. Gill's Hill 1, SW NE Section 4-10-13, is a rig. Honeycutt Oil & Gas Company's Porter 1, Section 26-12-13, was waiting for pipe at 2850 feet. Mrs. Aleene Ibach, Trustee's Rambin Estate 1, NW NE Section 32-11-11, has set 10-inch at 120 feet. E. T. Oakes' Johnson 1, Section 30-13-15, is coring at 4443 feet. Geo. L. Pace's Jno. Cale 1, SE NE Section 11-11-11, is a derrick. Potter et al's Dowling Bros. 1, Section 31-14-14, was waiting for casing at 3068 feet. Walters & Nicholson's Jim Guy 1, Section 3-11-13, was waiting on standard rig at 2767 feet. Jack Whitson's Sanders 1, SW SW Section 19-11-13, elevation 285 feet, drilling at 2350 feet.

In Lincoln Parish, Benedum & Trees'

Dubach 1, SE NE Section 25-20-4e, was drilling at 4140 feet.

In Natchitoches Parish, Gerson et al's Smith 4, Section 11-10-8w, is testing at 450 feet.

In Rapides Parish, Petroleum Independent, Inc.'s Lee 1, SW NW SE Section 13-5n-2e, is a derrick.

In Red River Parish, H. M. Jones' Sample 1, NW NW Section 10-14-11, is moving in rig.

Long List in Sabine

In Sabine Parish, Alford & Cleary Bros.' Jackson 1, SE NW Section 10-9-13, Patrick 1, SW NE Section 11-9-13, and Patrick 2, SW NE Section 11-9-13, are locations. C. M. F. Oil Company's Aaron & Musser 1, NW NW Section 32-9-13, is a rig. Evans Bros.' Crawford 1, SE SE Section 20-9-13, is a rig. R. L. Gay, Trustee's, Long-Bell A-1, NW NW Section 10-8-13, will resume at 6882 feet. R. L. Gay, Trustee's Bowman-Hicks B-1, Section 22-10-13, is a location. R. T. Henderson's Sistrunk 1, SE NW Section 9-9-12, is drilling at 1500 feet. Lee & Burnett's Burkett 1, NW SW Section 10-9-13, elevation 204 feet, had base Midway at 1472 feet and is shut down at 1620 feet. LeGrand & Jackson's McGough 1, Section 2-8-10, is shut down at 2200 feet. H. C. Lessenger's Bowman-Hicks 1, NW SW Section 13-9-13, is a derrick. C. D. Loe, Trustee's Whitney Corporation 1, NW NE Section 12-9-14, is shut down at 1600 feet. Loring Oil Company's Bowman-Hicks 21, Section 16-7-12, is drilling at 5280 feet. Ben Merritt's Lucius 1, SW NE Section 4-5n-12w, is a derrick. M. W. Ransom, Simpson 1, Section 30-7-10, is a derrick. Rockmill et al's Bowman-Hicks 1, NE NW Section 36-9-14, is drilling at 1000 feet. Rockmill et al's A. M. Casell 1, NE NE Section 35-9-14, is a derrick. Rockmill et al's Patrick 1, NE SW Section 21-9-13, is a rig. Service Drilling & Royalty Corporation's Whitney 1, SE SE Section 32-10-13, is drilling at 995 feet. E. M. Self's G. I. Paul 1, NE SW Section 9-9-13, is a derrick. Simmons et al's Fleming 1, SE SE Section 11-8-13, is a rig. C. W. Smith et al's Pattison 1, Section 30-10-11, is drilling at 2000 feet. Southland Drilling Company's Frost 1, NE NE Section 13-9-11, is drilling at 2290 feet. Southland Drilling Company's Ross Olive 1, Section 10-9-10, is drilling at 2050 feet. Mrs. Gertrude Terry, Trustee's, A. Burkett 1, NE NW 10-9-13, is a location. W. M. Ungerman's Cross 1, SW SE Section 25-8-11, is drilling at 1850 feet. Ben Youngblood et al's A. J. Burkett 1, NE NW Section 10-9-13, is a derrick.

In Union Parish, E. S. Goens' Frost 1, Section 17-22-2e, has spudded. Wing Hong, Trustee's, Union Sawmill 1, SE SE Section 15-22-1e, is drilling at 1600 feet. Wingfield et al's Union Sawmill 1, SW SW Section 27-23-1e, is shut down at 185 feet.

In Webster Parish, Silvey et al's Drake 1, Section 14-19-10, is shut down at 210 feet.

In West Carroll Parish, Mamie S. McCurry et al's Richardson & Donnen 1, Section 13-19n-9e, is a rig.

In Winn Parish, P. V. T. Oil Company's Southern Advance Paper Company 1, NW SW Section 28-13-5w, was waiting for pipe at 1050 feet.

In Vernon Parish, Llano Colony's Fee 1, Section 34-2n-9w, had top of Jackson at 2055 feet, top of Cockfield at 3150 feet and is shut down at 3344 feet.

Plan 3500-Foot Test in Union County, Arkansas

El Dorado, Arkansas.—J. K. Wadley and Associates are moving in rig for a wildcat in Union County, Arkansas, Moore 1, NE SE SW Section 35-19-17. This will be a 3500-foot test and location was made on the geology of E. A. Stiller, who recently resigned as chief geologist for Arkansas Natural Gas Corporation, and is now employed by Mr. Wadley and his associates.

This block is about three miles southwest of a 4000-acre block on which location was recently made by Graves and Associates for Patterson 1, Section 31-19-16, a wildcat which may go to 4250 feet.

Harrell and Associates of El Dorado, Arkansas, has secured a wildcat block in southwest Jefferson County, and is moving in a rig on the McGaughey lease near the town of Faith.

In Cleburne County, Fred S. Craver, Donithan Lumber Company 1, SW SW Section 34-11-9, was drilling at 3380 feet.

In Columbia County, Kendall Oil Company's Fullenwider & Kitchen 1, NE NE Section 13-17-22, is shut down at 2500 feet.

In Jefferson County, Harrell et al's McGaughey 1, location not given, materials.

In La Fayette County, Sam Wilson, Jr., Smith 1, NW SE Section 24-19-23, is a rig.

In Little River County, American Portland Cement Company, Fee 1, SW NE Section 21-12s-32w, drilling at 790 feet.

Miller County

In Miller County, Dennis & Cubbage, Head 1, SW SW Section 20-15-26, shut down at 2950 feet. Duluth-Arkansas Oil Company, Beck 1, NW SW Section 34-15-26, is setting six-inch casing at 2780 feet, total depth 2790 feet. Pederson et al, Fouke 1, NE NE Section 11-17-27, has set 10-inch at 105 feet. John C. Rogers, Price 1, Section 17-16-25, is rig. Bob Simmons abandoned location on Lamb 1, Section 14-16-27. C. E. Starr, Barker 1, NW SE Section 31-17-26, is a rig. Stephens & Byers, Jones NE NW Section 14-16-27, has materials on the ground.

In St. Francis County, Kentucky-Arkansas Oil Company, Britton 1, NE NW Section 1-4n-1e, was fishing at 3775 feet.

In Union County, E. H. Cassity, Dumas 1, SE SW Section 10-17-16, is a rig. Graves et al, Petterson 1, NE NE Section 31-19-16, is a rig. Mamie S. McCurry et al, Rowland 1, SW SW Section 9-19-11, has materials on the ground. J. W. Wadley et al, Moore 1, SE SW Section 35-19-17, is moving in rig.

In Woodruff County, B. F. Thompson, Rosser 1, SE SE Section 7-5n-2w, is shut down at 811 feet.

In Yell County, Rainbow Oil & Gas Company, Berry 1, NE NE Section 16-5n-24w, was spudding.

Miller County Drill Stem Test Revives Interest

Texarkana, Arkansas.—Renewed interest to operations in Miller County, southwest Arkansas, was furnished last week by a drill stem test made in Baker and Associates' E. L. Beck 1, SW SE Section 33-15-26, which showed much oil and some gas at 2920 feet. Operators report 11 fourbles of oil and mud in 20 minutes. Six-inch casing is being cemented. This test is in the same section with Fitzwater and Associates' Beck 1, recently completed as a 25 to 40-barrel daily pumper at the 2900-foot level.

Two new locations were announced in Miller County for the week ending December 7. C. E. Starr has rig up for Barker 1, NW SE Section 31-17-26 and Stephens and Byers have materials on location for Jones 1, NE NW Section 14-16-27. Bob Simmons' Lamb 1, NW NW Section 14-16-27, will not be drilled.

Two Shallow Dry Holes Completed in Arkansas

El Dorado, Arkansas.—No flush oil was added to Arkansas production columns during the week as the only two completions recorded, one in Miller County and one in Washington County, were relatively shallow dry holes. They were as follows:

Company, Well and Location	Initial Production Bbls.	Depth
Miller County—		
Duluth-Ark. Oil Co., Stone 1, 32-14-26	*	2535
Washington County—		
Chase & Rogers, Cunningham 1, 14-15n-32w	*	1750

Yell County Test Only New Announcement in Arkansas

El Dorado, Ark.—The only drilling permit granted in Arkansas during the week ending December 10 was for Rainbow Oil & Gas Company's Gus Berry 1 in Yell County. Berry 1 will be drilled on a location 300 feet south and 300 feet west of NEc SE NE Section 16-5n-24w.

Mississippi Wildcat Misses Again on Drill Stem Test

Jackson, Miss.—Stauffer and Kouri, Trustees, missed another attempt at a drill stem test at 3026 feet in Bond 1, wildcat, SE NE Section 18-2n-12e, Lamar County. This test, which is located in the Purvis district, has an elevation of 364 feet.

In Hinds County, Love and Lancaster's Elton Plantation 1, SE SE Section 17-4n-1e, elevation 260 feet. Selma chalk 4062-4550 feet cored calcareous shale in the Eutaw at 4810 feet.

In Jackson County, Gulf Refining Company's Dantzler Lumber Company 1, SE NE Section 27-4s-8w, is a rig.

In Jasper County, L. Spraragen et al's Bank of Philadelphia 1, SE SE Section 35-3n-12e, elevation 600 feet is shut down for a boiler at 2900 feet.

In Lamar County, in the Cane River district Dr. Charles Gorr et al's Jordan 1, NW SW Section 1-2n-15w is a derrick.

In Monroe County, P. J. McAlpine et al's Charles Rye 1, SE NW Section 22-15s-16w is drilling at 2265 feet.

In Wilkinson County, Foster Creek Oil Corporation's Foster Creek Lumber Company 1, NW NW Section 12-2n-2w is a derrick.

Two Locations Announced For One Alabama County

Shreveport, La.—Jos. Bruner et al have announced two locations for wildcat tests in Marengo County, Alabama, Nolan Store 1, Section 23-14n-1e, and Fee 1, Section 36-14n-2e. In Lamar County, NW NW Section 22-15s-17w, P. J. McAlpin is preparing to deepen Gardner 1 from 3350 feet.

In Mobile County, Alabama, J. C. Price et al's M. & O. 1, SE NE SW Section 33-2n-4w, was drilling at 3810 feet. In Washington County, South Alabama Oil & Gas Company was preparing to deepen St. Stephens A-1, Section 26-7n-1w, from its present depth of 2250 feet.

One of Five Mississippi Tests M[illegible]o 7000 Feet

Jackson, Miss.—Joe Modisette of El Dorado, Arkansas, has taken a half interest in E. R. Owens' contract to drill a 3500-foot wildcat test in Covington County, Mississippi, for Eastman-Gardiner and Company of Laurel. Unconfirmed reports are to the effect that this company will eventually drill five tests on holdings in south Mississippi, one of which may go to 7000 feet.

Gulf Refining Company's Dentzler Lumber Company 1, SE NE Section 27-4s-8w, Jackson County, Mississippi, Gulf Coast area, has installed gasoline rig and is expected to drill to 3000 feet in present location, starting coring for contacts at 700 feet. This company it is rumored will later drill a deep test on its large South Mississippi holdings, if several shallower tests warrant it.

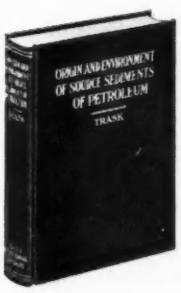
Tennessee Test Going Ahead After Cementing Casing

Nashville, Tenn.—Gilmore et al's Scott 1, wildcat test in Chester County, is drilling ahead below 2523 feet after having successfully cemented a string of 5 3/16-inch casing at 2485 feet.

A Book That Will Be Consulted by Geologists for Years to Come—

"Origin and Environment of Source Sediments"

By **PARKER D. TRASK** *and* **C. C. WU**



This book, recently off the press of the Gulf Publishing Company at Houston, embodies the results of five years research on the part of scientists assigned to this study by the American Petroleum Institute in carrying on the work made possible by the John D. Rockefeller gift of a quarter of a million dollars to be spent in fundamental research.

In summary the book presents—

Collection and Preparation of Samples
Measurement of Organic Content
Distillation Tests
Texture of Sediments
Calcium Carbonate Content of Sediments
Relation of Organic Matter to Environment
Detailed Analyses of Organic Constituents of Sediments
Change in Organic Content With Depth
Comparison of Past and Recent Sediments
Miscellaneous Results
Theoretical Considerations

323 PAGES, SIZE 6 X 9—FABRIKOID BINDING

Price, postage paid, $6.00. Send order to the
GULF PUBLISHING COMPANY
Book Dept., Box 2811, Houston, Texas

B-M-W PRODUCTS for pumping wells
The KEY to LOWER LIFTING COSTS
CORRECTLY DESIGNED .. ECONOMICALLY PRODUCED
REASONABLY PRICED

Admore Liner Barrels meet competition with a smile

It always wins, hands down! Ask your Supply Store to show you the Admore — you will approve of the new B-M-W Seater Cups for Admore Lower Valves; examine the 8-cup Double Group Plunger Fitting for your deeper wells.

Give the Admore any test you like — it will win.

BRADFORD MOTOR WORKS INC.
OIL WELL SUPPLIES
BRADFORD, PA. TULSA, OKLA.
EXPORT OFFICE—30 CHURCH ST.—NEW YORK CITY

Value of Colorado Discovery Doubtful As Tests Progress

Denver, Colo.—Definite information about the value of the discovery made by the Ramsey Petroleum Corporation in the New Raymer-Buckingham district in northeastern Colorado is still lacking. After running 5-3/16-inch casing to bottom of hole at 6765 feet, a production test was made of both the Muddy and Dakota formations, the pipe having been perforated through the Muddy sand. An initial 24-hour test showed approximately four million cubic feet of gas with a production of five barrels of high grade crude per hour. The test was made by allowing the gas to flow into a separator.

The well, Tighe 1, SW NE SE Section 24-6n-61w, Weed County, has been drilled only three feet into the Dakota, and it is believed that the production could be increased by drilling deeper.

Reports that some water was showing with the oil from the Dakota formation have been denied by the management of Ramsey Petroleum Company. Officials of the company said the water was coming from a different horizon than the source of the oil. They stated that they reached this conclusion because the fluids are separating easily. Hole is now waiting for orders whether to drill deeper or go on production from the present depth.

In the meantime, the influx of Oklahoma operators continues and trading in acreage and leases is quite active. Several royalty concerns have been very active in buying royalties and a number of major producing companies in the Rocky Mountain region have also taken over blocks recently. Contracts have been made for drilling at least three more wells on the structure, the work to be started not later than June 1, 1933.

Other Tests

In Adams County, Hills Dome Lease Development Company's well SE Section 27-3s-68w, is standing at 4119 feet.

In Arapahoe County, McDeb Drilling Company's Fitzsimmons 1, NE Section 7-4s-66w, is fishing 4¾-inch, total depth 6110 feet.

In Delta County, Black Canyon Oil & Gas Company's Lot 12, Section 5-15s-94, is installing larger rig; depth 330 feet.

In El Paso County, Gulf States Oil Corporation is drilling plug in Carson 2, NE Section 10-16s-66w, at 2000 feet.

In La Plata County, McGarr Pete Company has rig up for Pinon Mesa 1, NE Section 34-33n-12. J. W. Irwin & Company's Doescher 1, NW Section 29-33-13, has resumed with rotary at 3171 feet.

In Larimer County, C. Leonard Smith's U. P. 1, SE SW Section 31-12n-69, is fishing tools at 172 feet.

In Lincoln County, Eastern Colorado Oil Corporation's State 1, NW Section 36-14s-57w, has a hole full of water from Dakota at 3464 feet.

In Montrose County, Uncompahgre Oil & Gas Company's Vandemark 2, Section 27-50n-10, is to resume at 800 feet.

In Routt County, Mid-Colorado Petroleum Company's Omholt 1, SE Section 29-4n-87, has cemented a cave, has 2M gas showing and will go deeper from 1917 feet.

In Weld County, Reiter-Foster Oil Corporation's Wilson 1, NE SE Section 24-6n-61w, drilling at 550 feet.

Three New Operations For New Mexico Areas

Hobbs, N. M.—Three new operations were announced for New Mexico during the week, as follows:

In Eddy County, W. A. Scott has located Kaiser 2, NW SE Section 7-18-28, and Price & Sons, Price 1, center Section 15-16-23.

In Lea County, Gypsy Oil Company announced Hardin 2, SE Section 18-18-38.

Wildcat Work Pushing Ahead in New Mexico

Hobbs, N. M.—Wildcat drilling operations in New Mexico currently are reported as follows:

In Bernalillo County, Norrins Realty, Pajarito Grant 1, Section 22-9n-1e, was standardizing at 2359 feet. Norrins Realty, Galegas Grant 1, Section 19-11n-4e, is drilling at 100 feet.

In Chaves County, Warman Oil Trust's Weldon & Hoar, SE Section 9-14s-25e, to set 10-inch at 193 feet.

In De Baca County, Landowners Oil Company's State 1, NE Section 16-1s-27e, fishing lugs at 5240 feet.

In Dona Ana County, Middle States Oil & Gas Company's Boretzi 1, Section 14-36-5e, has rig up. Viking Oil & Gas Company, SW NW Section 26-35-5e, drilling below 250 feet.

In Guadalupe County, New Mexico Producing & Refining Company's McMillan 1, Section 24-5n-16e, is waiting for orders at 4507 feet. New Mexico Exploration Company's Anton Chico Grant 1, SW Section 20-9n-17, drilling at 945 feet.

In Rio Arriba County, Pan-States Oil Company, Section 26-3s-1e, is rigging up.

In Roosevelt County, Peterson et al's Good 1, SE NW Section 32-5s-30e, rig up.

In San Miguel County, Cabra Springs Oil & Gas Company's Thompson 2, NE Section 22-12-22, waiting for water at 410 feet.

In Santa Fe County, Kelsey Clients' 1, Section 26-10n-10e, working with 8¼-inch at 861 feet. Western Natural Resources Corporation, Inc., San Clemente Grant 2, NE Section 5-6n-1e, drilling at 3015 feet. Gravity Petroleum Corporation's Clara R. Reed 1, Section 30-11n-9w, has cellar completed.

Hobbs Output Lower As Takings Are Cut

Hobbs, New Mexico.—A reduction in crude nominations by the four purchasing companies serving the Hobbs field caused the output to be lowered from 25,000 to 21,326 barrels daily for the December 1-15 proration period. This loss of 3674 barrels will be temporary, according to C. G. Staley, proration umpire, as the crude buyers have agreed to restore the total nominations to the former level beginning December 16. Nominations by companies for the first period in December are: Humble Oil & Refining Company, 9000 barrels; Shell Petroleum Corporation, 7000 barrels; Atlantic Oil Producing Company, 4500 barrels; and The Texas Company, 826 barrels, making a total of 21,326 barrels.

Recent completions in the Hobbs field include the following:

Company, Well and Location	Initial Production Bbls.	Depth
Lea County (Hobbs field)—		
Gypsy Oil Co., Hardin 1, se 18-18-38	¶13-19,669	4221
Stanolind O&G Co., State 29, nw 10-19-38	508	4174
Repollo Oil Co., Grimes 2, 28-18-38	551	4223

Plenty of Interest for Cut Bank District

Cut Bank, Mont.—Interest continues at a high point in the Cut Bank district north of here. The W. M. Fulton interests announced location of a test to be drilled two miles west of the proved area, and Hannah-Porter Oil Company announced a new location in the field last week. The Fulton well will be on NE NE NE Section 16-34-

6w; Hannah-Porter Oil Company's well will be on the Britton property, NW NE NE Section 23-34-6w. The latter is an offset to the east of the Santa Rita Oil Company's producer which had an initial production of more than 240 barrels per day.

In spite of the cold weather, work on the Montana Power Company's absorption plant which is under construction by the Stearns-Roger Manufacturing Company, is making good progress. The location is east of the town of Cut Bank. All work is to be completed and the plant ready for operation by December 10 and it is announced that this will be accomplished.

There are 11 active wells in the field at present.

Good Indications for Producer At Dry Creek

Red Lodge, Mont.—Excellent indications for another good producer in the Dry Creek field are reported by Ohio Oil Company. Robinson 7, SE Section 3-7s-21e, after having cemented off water in the bottom of the Lakota sand and perforated pipe set through the Dakota in order to save the production from both horizons, made a sensational flow of 200 barrels in 30 minutes. More perforations will be made and the well will be put on production.

A bailing test of McMinn 1, NW Section 7-7s-21e, is being made by Carbon Oil & Gas Company in the eastern part of the field. The hole is bottomed at 5527 feet in the Dakota formation, showing considerable oil and some gas. It is understood that the company's Armstrong 1, east of McMinn 1, is to be drilled deeper from 5565 feet where it has been producing from the Dakota.

Ohio Oil Company is still plugging off the water from the Lakota sand in Bowman 11, in the northwestern extension of the field, Section 7-7s-21e.

Skimming Plant Will Take New Wyoming Oil

Casper, Wyo.—A skimming plant to operate upon crude from the Spindletop field southwest of Casper is being constructed in Casper by a group headed by George W. Jarvis. There are three completed wells in the field on the properties of the Wyalto Oil Company of which Mr. Jarvis is local manager. The company is financed by Canadian capital. Plant will manufacture gasoline, distillate, and fuel oil and will specialize in road oil.

Six Tests Reported for Wyoming Fields

Casper, Wyoming.—Six new operations were announced by Wyoming operators during the week, including the following:

In Fremont County (Pilot Butte), Kinney-Coastal Oil Company will drill on NW Section 22-3n-1w.

In Lincoln County (Big Piney), Piney-LaBarge Oil Company on Section 12-28-114.

In Carbon County, Thos. B. Neff, on Section 3-26-90. Ohio Oil Company, Section 34-23-79.

In Converse County (Poison Lake), Dilger et al, on Section 32-31-71.

In Park County (Frannie field), Continental Oil Company will drill N. P. 1, on Section 23-58-98.

Give Completions In Three Wyoming Pools

Casper, Wyoming.—Five completions during the week in Wyoming involved three fields and included four oil producers and one gas well, the latter a small producer at Dutton Creek in Carbon County. The Osage field reports three oil producers with combined initial of 96 barrels, and the Big Muddy field had one producer reporting 60 barrels.

Details for the week are as follows:

Company, Well and Location	Initial Production Bbls.	Depth
Converse County (Big Muddy)—		
Ohio Oil Co., Kinney 25, se 4-33-76	60	4326
Carbon County (Dutton Creek)—		
Mutual Oil Synd., 12-18n-78w	¶1	1550
Weston County (Osage Field)—		
M. S. & W. Oil Co., 13, nw 30-46-63	6	1446
Chadron-Osage Oil Co., 18, sw 14-46-64	40	2057
Yellowstone Pete Co., McCullough 3, ne 23-46-64	50	1780

Progress Shown In Wyoming Wildcats

Casper, Wyo.—Progress in wildcat development in Wyoming is currently reported as follows:

In Big Horn County, Crosby & Huntington are to resume in Denio 1, Tract 43, Section 15-55-97. Depth is 610 feet.

In Crook County, St. George Oil & Gas Company was drilling at 800 feet in its test on NE SE Section 20-53n-61w.

In Fremont County, Ward Oil & Gas Company, Section 28-34-90, was running 8¼-inch at 4300 feet.

In Natrona County, Summitt Oil Company's Trevett 1, Section 21-33-80, was running 6⅝-inch to bottom at 1825 feet.

In Platte County, T. B. Oberman,

Montana Gets New Work, Tests Proceed Despite Weather

Casper, Wyo.—Two new operations were announced for Montana during the week, as follows:

Pondera County — Francis Hawley, Porter 1, 35-37-5w.

Toole County (Whitlash)—Wild et al, Mahoney 1, sw se 23-37-4w.

Montana wildcat work continued active despite weather conditions, various operations reporting the progress detailed below:

In Carbon County, Corbett Royalty Company, SW SE Section 1-6s-23e, was drilling at 1245 feet. Jack Creek Oil & Gas Company's 2, SE Section 15-7s-23e, has changed to gasoline engine and is drilling at 1400 feet.

In Fergus County, Melton Corporation 1, SW Section 24-31n-17e, underreaming 6¼-inch to drill deeper from 3305 feet.

In Gallatin County, Montana Gas & Petroleum Corporation, Adams 1, Section 35-1n-2e, had total depth of 1700 feet.

In Glacier County, W. M. Fulton, NE Section 16-34n-6w, location.

In Golden Valley County, Golden Valley Oil Company, Section 2-6n-22, rig burned, total depth 3400 feet.

In Liberty County, Peoples Oil & Gas Company, NW Section 17-35-6e, drilling at 2810 feet.

In Pondera County, Francis Hawley, Porter 1, Section 35-27-5w, drilling at 300 feet.

In Toole County, Liquid Gold Oil Company, 1, Section 25-36-1e, recementing casing at 2644 feet.

In Valley County, Opheim Oil & Gas Company, NE Section 28-37n-38e, shut down at 1000 feet.

In Yellowstone County, Peter Antonioli, NE Section 2-2n-25e, had casing on hand, ready to run at 2370 feet. Rice-Fulton et al, Section 20-2n-23e, drilling at 300 feet.

NW SE Section 30-21-68 drilling in lime at 150 feet.

In Washakie County, Bales Oil Trust's Brome 1, NE NW Section 13-48n-90w, is preparing to pump from 1430 feet.

In Weston County, Julius Peters et al's Weitzell 1, NW Section 30-46-64, is ready to pump from 4590 feet. Gose Syndicate, NE Section 28-37n-63w, was underreaming six-inch, depth is 5050 feet.

Colorado Gas Well Increases Output

Rock Springs, Wyo.—Work of deepening Florence Wilson 1, Section 22-12-100, on Hiawatha dome in northern Moffat County, Colorado, has been completed by Ohio Oil Company. The gas flow has been increased to one million cubic feet. Drilling was suspended at 2232 feet. This was the discovery well in the field and for some time had been making a little oil along with the gas. It was deepened for experimentation, to determine whether oil would develop. There was no increase and the well is to continue being utilized as a gasser.

One Oil Well Shown For Montna Fields

Casper, Wyo.—Two completions in Montana during the week included one oil well, initial production 10 barrels, and one failure, as follows:

Border Field—

Company, Well and Location	Initial Production Bbls.	Depth
Askalta Oil Co., Farbo 8, 2-37-4w	*	2535
Glacier County (Cut Bank Field)—		
Santa Rita Oil Co., Yunck 2, se 24-34-6w	10	2826

Standard Group Dividends Lowest Total in Years

New York.—Dividend disbursements of the Standard Oil group are estimated at $181,050,895 for 1932 by Carl H. Pforzheimer & Company. This amount will be the lowest annual total for these companies since 1926, when payments were $200,311,594.

Reductions in the dividend rates of Socony-Vacuum Corporation, Standard Oil Company (Indiana) and Standard Oil Company of California are in a large measure responsible for the drop for 1932 from the $220,739,182 paid in 1931.

Four companies, Standard Oil Company (New Jersey), Chesebrough Manufacturing Company, Imperial Oil Ltd., and International Petroleum Company are among those which maintained dividends in 1932 at rates prevailing in 1931.

Twenty Tests Seek New Fields In Eleven Michigan Counties

Mt. Pleasant, Michigan.—With 20 actively drilling wildcats and two wildcat locations scattered over 11 counties, it is not improbable geological information may be revealed which may lead to discovery of new fields in Michigan during the coming year.

In Isabella County, Shell Petroleum Company's Fritz 1, Broomfield Township, Section 13, has spudded. E. S. Hammond's Graham 1, Chippewa Township, Section 22, is drilling at 975 feet.

In Gratiot County, J. G. Tiplady's Laycock 1, Arcada Township, Section 11, is drilling at 1450 feet. Shell Petroleum Company's Covell 1, Seville Township, Section 15, is drilling at 250 feet; Mellinger 1, North Star Township, Section 9, is drilling at 90 feet. Ralph W. Melhorn's Kerr 1, Elba Township, Section 2, is a location.

In Clare County, Strange Oil & Gas Company's Littlefield Ranch 1, Surrey Township, Section 9, is a location.

In Muskegon County, H. and W. Feicke's Feicke 2, Fruitland Township, Section 1, is drilling at 150 feet.

In Saginaw County, Webber's Kirchner 1, Tittatabwse Township, Section 15, at 4300 feet has treated with acid and is swabbing. Smith Petroleum Company's Johns 1, Birch Run Township, Section 21, has spudded.

In Newago County, Newago Oil and Gas Company's Bates 1, 13n-13w, Section 12, is drilliing at 5900 feet. C. W. Treater's Hatch 1, Brooks Township, Section 8, is drilliing at 250 feet.

In Oceana County, A. S. Cochran's Hannum 1, Elbridge Township, Section 31, is drilling at 2350 feet. L. E. DuVall's Wallace 1, Elbridge Township, Section 34, is shut down with salt brine in the Traverse at 1900 feet. Johnson Oil Refining Company's Gilipin 1, Leavitt Township, Section 15, is drilling at 250 feet. Varner and Lockwood's Flood 1, Pentwater Township, Section 34, lost the hole on its first location and is drilling at 400 feet in new hole.

In Cass County, Robert Anderson's Conkright 1, North Porter Township, Section 29, is drilling at 350 feet. Scott Stampler's Wright 1, Section 28, 5s-14w, is straightening hole at 2450 feet.

In Livingston County, H. Snell et al's Zebb 1, Genoa Township, Section 34, is drilling at 2400 feet.

In St. Clair County, Snavely and Craft's Norman 1, Grant Township, Section 22, is drilling at 150 feet.

In Wexford County, Oil Properties Corporation's McNitt Estate 1, Haring Township, Section 10, is drilling at 300 feet.

Expect Dundee Well For Oceana County

Mt. Pleasant, Mich.—The first Dundee lime completion to be made in Oceana County, which came in for a brisk play following a Traverse oil strike several months ago, will be made probably within the next week on A. S. Cochran's Hannum 1, Elbridge township, Section 31, now drilling at 2350 feet. The test made salt brine from 2000 feet in the Traverse.

L. E. DuVall's Wallace 1, same township, Section 34, is shut down at 1950 feet in the Traverse with a hole of salt brine. Deepening to the Dundee depends on the outcome of the Hannum 1.

Two other tests are being sunk in Oceana County.

An accurate 24-hour gauge of the discovery well was never made, it being shut in shortly after drilled in because of court litigation. Estimates from 50 to 100 barrels a day were made from hour tests.

Only Two Producers For Montana Fields

Mt. Pleasant, Mich.—Besides the completion of an important wildcat well, Pure Oil Company's Yost 1, Midland County, Greendale township, Section 35, five other tests were completed in Michigan during the week with only two making commercial wells.

Columbia Oil & Gas Company's Gislon-Fales 1, Midland County, Greendale township, NE NE SE Section 16, was good for 125 barrels initial from 3568 feet. Pure Oil Company's Harnick A-2, same township, Section 14, was light with a 15-barrel initial and will be treated with acid.

Theodore Oil Company's Thompson Brothers 1 wildcat test, Clare County, Greenwood township, Section 35, drilled into salt brine at 4232 feet and was shut down and probably will be abandoned without further deepening. The Dundee lime was topped at 4180 and five feet deeper a 10-barrel show was made. The formation hardened up in the next screw and the well hit brine.

Michigan Gas & Oil Company's Lynch

1, Isabella County, Vernon township, Section 35, an offset to a producing natural gas well, drilled into brine at 1325 feet.

The same company's Rayner 1, Midland County, Lee township, Section 6, about a half-mile northeast of the farthest producing well in the Central Michigan east extension pool, has been abandoned at 3548 feet.

Drilling in the district northwest of the old Chippewa pool in Isabella County shows promise of being revived as a result of getting production from the Traverse formation on the C. F. White, Dennis 1, Chippewa township, Section 3. The well made two 15-barrel flows from the Traverse after being treated with acid. East of this well in Section 2, Goll-Graves-Mechling's Adams 2, swabbed 10 barrels from 3550 feet and made a 35-barrel flow in one hour after being run with acid. Both wells are being tested.

A detailed list of the completions by counties follows:

Company, Well and Location	Initial Production Bbls.	Depth
Midland County—		
Pure Oil Co., Yost 1, Greendale Twp., s¾ w½, Section 35	1155	3447
Harnick A2, Greendale Twp., n¾ e½ ne, Section 14	15	3559
Moffett 6	500	....
Columbia Oil and Gas Co., Gilson-Fales 1, Greendale Twp, ne ne se, Section 16	125	3568
Michigan Gas and Oil Co., Rayner 1, Lee Twp., sw sw sw, Section 6	*	3548
Isabella County—		
Michigan Gas and Oil Co., Lynch 1, Vernon Twp., ne ne nw, Section 35	*	1325
Clare County—		
Theodore Oil Co., Thompson Bros. 1, Greenwood Twp., se nw ne, Section 35	*	4232

Bay City to Ask Bids On City's Gas Supply

Mt. Pleasant, Mich.—The Bay City, Mich., city commission this week indicated it would ask for bids rather than continue to negotiate further with the Consumers Power Company alone for the furnishing of natural gas to the city.

Consumers Power Company's Bay City artificial gas franchise expires March 30, 1933. The company recently proposed to furnished the city with natural gas but according to the commission has not offered a definite proposition other than that natural gas would save the city users $55,000 annually and bring a 15 per cent reduction in rates.

The utility is also negotiating with the city of Saginaw, Michigan, relative to furnishing natural gas.

Pure Holds All Near-By Acreage Around Michigan Wildcat Producer

Mt. Pleasant, Mich.—Pure Oil Company's Yost 1, Midland County, Greendale township, Section 35, a wildcat location four miles south of the proven Central Michigan field, flowed 1155 barrels of oil from 3447 feet on the first 24-hour open flow gauge after being drilled in. The Dundee limestone was topped at 3421 feet and the first gas and oil show made at 3440 feet, 19 feet in the sand. The hole was drilled seven feet deeper, the last foot being hard and with little porosity.

The well originally started for a deep test to the Sylvania, approximately 6000 feet, was drilled to the top of the Dundee with a 10-inch hole. The hole was reduced to 5-inch and core drilled into the Dundee. Core samples of the Dundee showed a greater porosity than any Dundee samples of the main field.

The well was drilled in four days before an open flow gauge was possible because of the lack of storage facilities. On a one-hour gauge the day after being drilled in it flowed 91 barrels.

While apparently on a highly productive Dundee dome the extent of the acreage which the Yost proves is questionable. Southwest of the well two miles is an abandoned Dundee well, the Converse 1, same township, Section 28, drilled by Pure Oil Company. It made a light oil show but was flooded with salt brine and abandoned.

Two miles east of Yost 1, W. L. McClanahan, Inc., drilled Caywood 1, same township, Section 36, on a lease held by the Shell Petroleum Corporation. It was abandoned as a dry hole in the Dundee.

Due south of Yost 1 Michigan Pacific Oil & Gas Company's Hoyt 1, Jasper township, Section 24, was abandoned as dry in the Dundee.

Yost 1 was 22 feet higher on the Dundee than the Caywood and about 70 feet higher than the producing wells in the east pool four miles north of the wildcat.

Yost 1 is located on the main structural trend, southeast, across Central Michigan on which the Clare County gas pool, the Isabella County Vernon township oil and gas pool, the Chippewa township oil pool and part of the Midland County, Greendale township, oil pools are located.

Pure Oil Company controls leases on virtually all land within a radius of two miles of the wildcat.

The well, in the opinion of geologists, is the most important strike made in Michigan exploration in the past 20 months.

Four New Wells Shown For Michigan Counties

Mt. Pleasant, Michigan.—Four new operations, announced before formal issuance of drilling permits, were scheduled by Michigan operators this week, two for Midland County and one each for Isabella and Gratiot Counties. Formal permits issued thus far this year for Michigan total 175 as against 101 for the corresponding period of 1931, which, expressed in percentage, indicates a substantial increase in drilling.

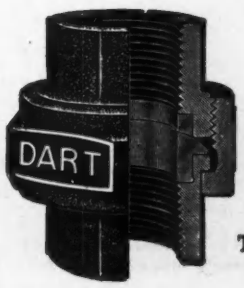
Following are Michigan's new operations:

Isabella County—Theodore Oil Company's Kane 1, Chippewa Twp., Section 3, NE NW SE.

Midland County — Pure Oil Company's Jacob 2, Greendale Twp., Section 9, C SW NW SE. Talbot Oil Company's State B, Greendale Twp., Section 11, SW SE SE.

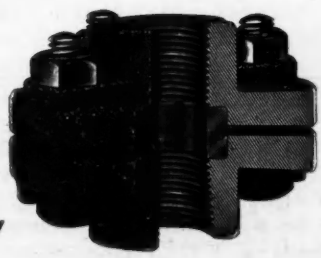
Gratiot County—Ralph W. Melhorn's Kerr 1, Elba Twp., Section 2, SE NW.

BRONZE TO BRONZE
Is the Reason



DART UNIONS
Give Service
Try Them

E. M. Dart Mfg. Company
PROVIDENCE, R. I.
The Fairbanks Company
Distributors



Eastern Fields Report
17 New Oil Wells for Week

Findlay, Ohio. — Completions for Eastern States fields totaled 44 for the week ending December 10 with Pennsylvania, West Virginia, Ohio, and Kentucky contributing 17 new oil wells, 13 gas wells and 14 failures. Initial production aggregated 297 barrels, with gas production amounting to 19¾ million cubic feet.

Of these states, Ohio headed the list in addition of new oil wells and gas wells, contributing 121 barrels of flush oil from seven of the total oil wells and 12 million cubic feet of gas from 11 gas wells.

A detailed report of completions by states and counties follows:

Pennsylvania

Company, Well and Location	Initial Production Bbls.	Depth
Allegheny County—		
Parks Oil Co., Burg 2	*	....
Greene County—		
Meadow Run Oil & Gas Co., Lynch 1	2	1940
Little Four Oil & Gas Co., Roach 5	1	....
Washington County—		
Goldie Rendall & Co., Arnold 1	*	1436
Martin Oil & Gas Co., McClain 1	2	995

West Virginia

Calhoun County—		
McCall Drilling Co., Garrett 2	¶1¼	1830
Boone County—		
The Pure Oil Co., Federal Coal Co. 58	¶6	2198
Gilmer-Calhoun Counties—		
Ellis, Rittenhouse Oil & Gas Co., Engle 1	35	....
Roane County—		
Reedy Oil & Gas Co., Guthrie 1	50	....
Big Four Drilling Co., Cottle 1	*	2618
Snyder Bros. & Co., Guthrie 1	*	1972
Wood County—		
G. C. Alleman Oil Co., Heckert 3	1	530

Southeastern Ohio

Noble County—		
C. L. Wise & Co., Gallagher 4	¶¼	1830
Washington County—		
Hilltop Oil & Gas Co., Hanlon 3	3	1820
Wickens & Wendel, Smith 26	*	1601
Kepple & Co., Cozzen & Co., 30	*	680
Kepple & Co., Weber 9	*	1800
Robinson Bros., Vanfossen 2	*	327
Hall & Henning, McKee 1	¶¼	1025

Central Ohio

Ashland County—		
Hulse & Co., Young 1	*	560
Belmont County—		
O. K. Oil & Gas Co., Murphy 1	¶1¼	1000
Union Gas & Oil Corp., Kurth 1	25	....
Kurth 2	20	....
Evanek 1	25	....
Dyken 1	35	....
Coshocton County—		
Murphy & Co., Little 1	¶¼	2996
The Preston Oil Co., Donaker 2	10	3057
Licking County—		
Wehrle Gas Co., Parr 1	*	3134
McClay Bros., Hoover 4	3	2865
Meigs County—		
A. M. Bengal, Carl 2	¶¾	1002
Muskingum County—		
The Pure Oil Co., Scott-Hammond 3	¶3	1165
Medina County—		
Curtis & Eaken, Brown Jr. 9	*	400
Stark County—		
Sisler & Co., Sisler 4	¶1¼	4407
Brendel Producing Co., Yearkey 3	¶4¼	4292

Northwestern Ohio

Seneca County—		
M. E. Kiser, Koerper 2	¶¼	....
Sandusky Gas Co., Hosler 2	¶¼	....
Flo B. Horner, Hoover 3	¶¼	....
Byron Jones & Son, Cessna 1	*	....

Kentucky

Daviess County—		
H. G. Brenner & Co., Wright 1	*	800
Brenner & Adams, Alsip 2	40	720
Hancock County—		
Chester Oil Co., Fuqua 3	15	....
Fuqua 4	10	....
Ohio County—		
C. E. Daugherty & Co., Bickett 3	*	....
The Ohio Oil Co., Pfister 3	20	....

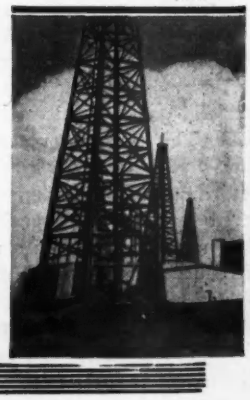
Operating our own Open Hearth Furnaces, Rolling Mills, Forge and Machine Shops — every operation is Harrisburg controlled. This production efficiency and economy is reflected in the quality and value of Harrisburg products.

●

"Just Any Old Steel" Won't Do

■ **Oil Field Products Require Special Steels** Almost any layman knows that the equipment used in the oil fields must be made of different steels than that used in—let's say—the coal fields. "Just any steel" will not do. The metallurgy involved in the manufacture of petroleum handling equipment has its own distinct problems and requirements.

■ **Harrisburg Makes Its Own Special Steels for Making Its Oil Field Products . . .** As one of the oldest and largest manufacturers of petroleum handling equipment in the nation, "Harrisburg" has been a pioneer in the designing of oil field equipment. We early "ran into" the metallurgical problems involved. Since for many years we have made our own alloy steels, we have been in a position to do the great amount of research work necessary to solve these problems. Accordingly, Harrisburg oil field equipment is not only designed by experts of long standing in the industry, but it is fabricated from our own steels, especially made for petroleum handling. Harrisburg equipment is right—clear through.



. . . . . HARRISBURG PIPE & PIPE BENDING CO., Harrisburg, Pa.

General Sales Agents

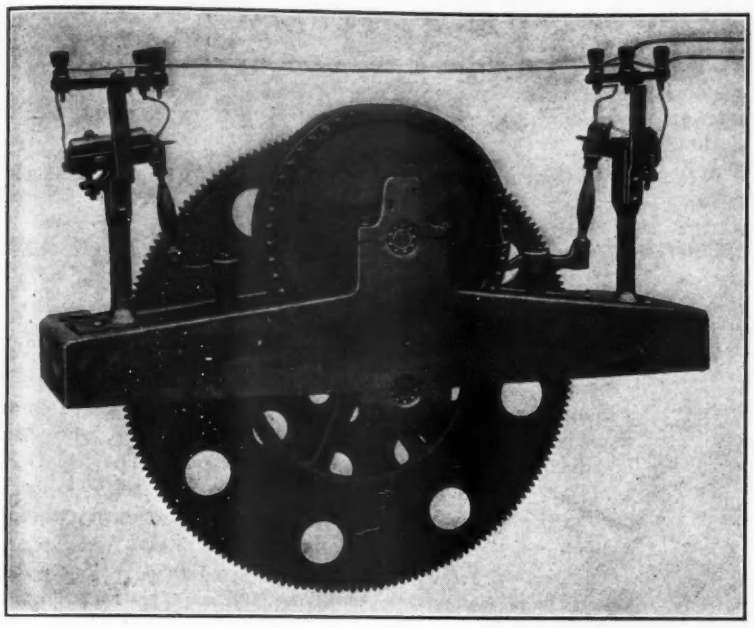
W. P. Paul Company.....Drexel Bldg., Philadelphia
W. R. McDonough Co.....National Bldg., Cleveland
S. C. Mead.....100 N. La Salle St., Chicago
Mid-Continent Supply Co.....Fort Worth, Texas

Cylinder Sales Agents

Joseph A. Janney, Jr.....Morris Bldg., Philadelphia
Charles L. Gulick.....110 E. 42nd St., New York
A. W. V. Johnson...Merchants Exchange Bldg., San Francisco
The Corbett Corp.....Sawyer & Winter Sts., Houston

New Equipment for the Field

MACHINERY • TOOLS CATALOGS • BOOKS



Interior View of Transmitter

1. Electric Tank Gauge

OIL CITY BRASS WORKS

Oil City Brass Works, Beaumont, Texas, is manufacturing and distributing an electric tank gauge which electrically records on indicators within the office the amount of oil in tanks to within an accuracy of one eighth-inch, according to the manufacturer.

This system consists of a transmitter mounted on top of a sheet metal well extending to the bottom of the tank, a float within the well, and a heavily insulated and armored cable from the transmitter to power supply and indicator.

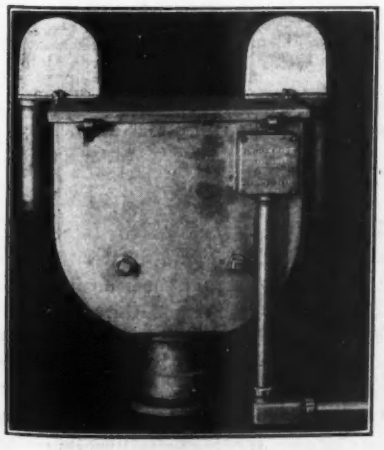
The well within which the float operates is of steel plate construction, perforated to admit the fluid, still breaking up any agitation or waves in the tank which would cause a movement of the float. Power supply is from station plant with auxiliary battery in the circuit, which is automatically cut in and out should power fail. The system operates on any type of electrical current.

The transmitter is of pure aluminum construction to withstand the corrosive action of hydrogen sulphide fumes. Mechanical and electrical parts are completely submerged in high resistant oil, thus sealing them from effects of gasses. Electric contacts are of mercury in sealed glass tubes. All working parts are automatically and positively locked after each impulse. Ball bearings are of patented construction to operate freely out of alignment up to 45 degrees.

The indicator is enclosed in a case of spun aluminum. Graduations are in feet, up to 50, on the outer circle and in inches and eighths of inches indicated by a smaller dial.

The two pointers on the dial are operated by a sturdy gear train actuated by two solenoids, one controlling the upward reading, the other the downward. These solenoids are designed to prevent burning out due to high voltage.

This system of electric tank gauging will record readings of an entire tank farm on a single control board within the office, according to the manufacturer.



Transmitter

Indicator

2. Torsion Balance Book

AMERICAN ASKANIA CORPORATION

American Askania Corporation, Houston, Texas, announces availability of an 88-page book by C. A. Heiland on use of the Askania torsion balance.

The book presents a summary of the field of torsion balance practice and a study of the geometric disposition and physical significance of forces measured by the torsion balance, the latter of which leads up to the fundamental equation in an elementary manner.

Discussion of the fundamental equation is followed by instructions as to how to calculate the gravity data from the instrumental records obtained in three, four, or five positions, and how to compute the planetary and topographic corrections. The book contains forms, graphs and tabulations to facilitate such computations in routine work.

The representation of corrected data in the form of maps and gradient curvature and gravity profiles is described. There is also a discussion of methods of interpretation and formulae for two-dimensional effects.

The balance of the book contains instructions for the most efficient operation of the instrument and its application in the field; such topics as the replacement of wires, the adjustment of balance beams, changes in instrumental constants when replacing wires, the selection and preparation of a station site, the methods of terrain observations, transportation of instruments and houses, are discussed.

The latest advances in torsion balance instrumental and interpretative technique, such as the reduction of beam displacements due to air currents, graphical methods in terrain and subter-

ranean effects, and the use of intergraphs for the same purpose have been considered.

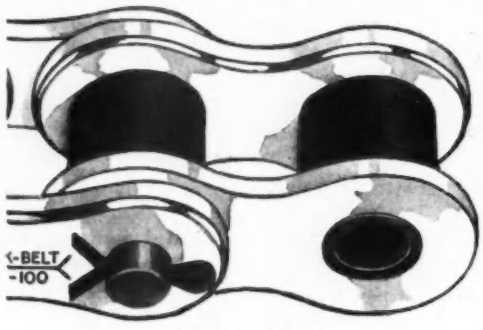
A chapter on the cost of torsion balance work, and a selected bibliography are appended.

3. Roller Chain

LINK-BELT COMPANY

Link-Belt Company, Indianapolis, Indiana, announces a roller chain to be known by the trade-name Link-Belt Silverlink. Although the chain is not made up with silver links, its side bars are especially treated to assist in resisting corrosion, and this treatment gives them the appearance of silver.

Silverlink roller chain is made in all sizes from ⅜-inch to 2½-inch pitch, and in single or multiple widths. It is available with wheels, for any horsepower, also with conveying



Link Belt Chain

attachment links in wide variety; and complete drives are carried in stock by distributors in sizes up to 225 horsepower, in speed ratios of 1 to 1 up to 8 to 1.

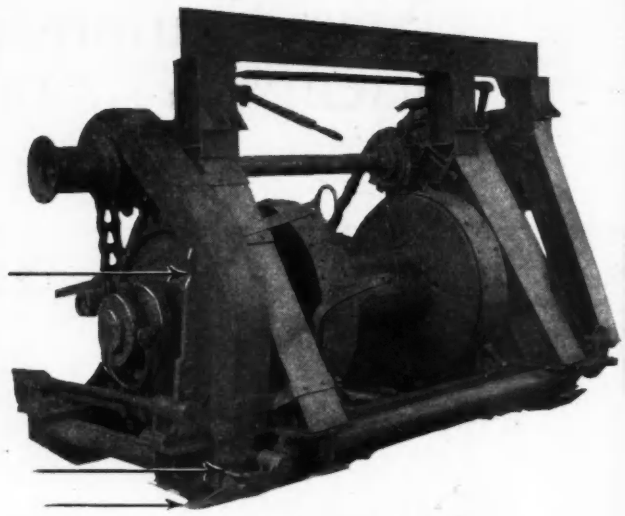
The construction features of Silverlink chain are enumerated as follows: sidebars of alloy rolled steel, heat-treated for strength and toughness, and especially treated to resist corrosion; nickel steel case-hardened pins, detachable type with cotter, or furnished riveted; solid steel case-hardened bushings; alloy steel heat-treated rollers made from strip steel having a strong fibrous structure, with the fibre running around instead of across the roller, so as to give the greatest strenth and resilience to the roller, and offer the maximum resistance to shock.

4. Portable Draw Works Unit

PORTABLE RIG COMPANY

Portable Rig Company, Houston, recently put on the market a new portable draw works unit which has a number of features of interest to operators today.

It is ready to set on the job and start drilling as it leaves the manufacturer's plant, yet operates as standard draw works, and is adaptable to any prime mover. The main frame is constructed and electrically welded in the shape of "A," with pro-



Portable Draw Works

visions for skidding in all four directions, and the drum is mounted on the base of the "A." Jack posts are inclined on an angle and welded to the base of the "A"-frame. Line shaft and jack shaft are mounted on the jack post. The two front braces are bolted from "A"-frame base to the jack post, completing the "A"-frame, and to permit removal of drum without dismantling of the line shaft, jack shaft or chains.

Old style draw works can be converted through application of this new design.

Where automatic cat-head is used, extra bracing conforming to "A"-frame is provided with line shaft extension.

Shifting controls are conveniently located at driller's position, and are all mounted within the "A"-frame assembly. Specially designed brakes, adjusted from front of draw works, cause 95 per cent of the total braking area of the drums to be contacted when brakes are applied. It is only necessary to remove four bolts, one in each end of brake bands, to remove bands for renewal of brake linings, and no springs are required to hold bands in equal suspension around drums when in released position.

A range of sizes is available to meet the various depth requirements, and the weight of any given draw works is in proportion to the size of the drum assembly.

5. Belt

THE B. F. GOODRICH COMPANY

The B. F. Goodrich Company, Akron, Ohio, announces a rubber belting which resists chemicals and oils. Patent covering the new type belting was issued by the United States Patent Office early in November.

The new belting has given satisfactory service after complete immersion in oil for several days, according to Goodrich engineers.

Oil Center Tool Company, Houston, has issued Catalog No. 6, a loose-leaf, file type catalog describing and illustrating OCT equipment, and carrying prices and discount sheet on individual products. Included in the line of OCT tools shown and described is the company's complete line of high pressure tubing heads, forged steel Christmas fittings, needle valve chokes, pump liners and rods, and tubing Crown blocks. A supplement is being added to the recently issued Catalog No. 6, showing assembled Christmas trees, which the manufacturers now assemble and test in their shop.

— — — — — — *MAIL COUPON* — — — — — —

THE OIL WEEKLY,
Houston, Texas, U. S. A.

Please see that I am supplied, without obligation, additional information on New Equipment Items Nos. _____ described in the December 12, 1932, issue of THE OIL WEEKLY.

Name .....

Company .....

Address .....

NEWS *from the Industry's* EQUIPMENT MAKERS

Goulds Pumps Vice President Dies at Seneca Falls

Seneca Falls, New York.—Seabury Smith Gould, vice president of Goulds Pumps, Incorporated, and outstanding citizen of Seneca Falls, died at his home in State Street, November 25, of pneumonia, at the age of 44.

Mr. Gould was born in Seneca Falls, a son of Seabury Smith Gould and Mary Mitchell Judd Gould. He prepared for college in the Lawrenceville School and at Mackenzie School in Dobbs Ferry. He matriculated in Cornell University and transferred to Hamilton in his second year, graduating from Hamilton College in 1911. After completing his college work, Mr. Gould entered the sales department of The Goulds Manufacturing Company and gained first-hand knowledge of selling methods and problems of the Gould organization. After two years of this experience Mr. Gould returned to the main office staff.

On November 15, 1913, Mr. Gould was married in Washington, D. C., to Miss Ana Fulton of that city. Mr. Gould became assistant treasurer of the Gould Company. In 1917 he was commissioned a first lieutenant and served throughout the period of the World War. After the close of the war he resumed his duties as assistant treasurer. He has been a director of the Gould Corporation and a vice president for several years. For the past year he has served as secretary of the Gould Corporation.

Mr. Gould was a Mason in Pocahontas Lodge No. 211, F. & A. M., and Salem Town Chapter, No. 173, R. A. M. He was a member and past president of the Seneca Falls Rotary Club. Mr. Gould became a director of the Utica Mutual Insurance Company early this year. He was a member of the First Presbyterian Church.

Mr. Gould devised the farm plot plan for employes of the company early this year by which acres of land owned by the company were used to produce food-stuffs for families of Gould men.

Mr. Gould is survived by his wife, one son, Seabury Smith Gould, and two brothers, Norman Judd Gould and Edward B. Gould.

Link-Belt Appoints Eastern Sales Manager

GEORGE M. SHARER

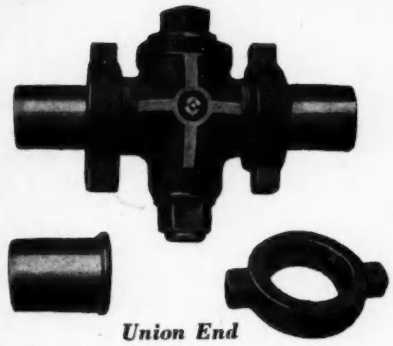
Link-Belt Company, Chicago, Illinois, announces appointment of George M. Sharer sales manager of its eastern division with headquarters in Philadelphia, where he will have supervision of Atlantic Coast States sales. Mr. Sharer, a mechanical engineer, has been with the Link-Belt organization 32 years.

Blaylock to Kansas City for Graton & Knight Company

E. G. Blaylock, who has served as Mid-Continent representative for the Graton & Knight Company of Worcester, Massachusetts, has been transferred to Kansas City, Missouri. Mr. Blaylock has received appointment as district manager, and will have charge of territory consisting of Missouri, Kansas, Nebraska, Iowa, Oklahoma, Colorado, Texas, and Wyoming. He will continue to spend a portion of his time on his old territory in the interest of the Graton & Knight Company, whose products are distributed through the stores of International Supply Company.

HOTEL PENNSYLVANIA
39th & CHESTNUT Sts. PHILADELPHIA
ROOM BATH $2.50
Now - Fireproof - Convenient
Nearest Hotel to Penna. R.R. Terminal

THE PEER of STOP COCK VALUES



Union End

The MacClatchie Lubricated Stop Cock has been greatly improved. Guaranteed to turn with ease at 2000 pounds pressure and without leaking. Made both screw and Union end. Cocks equipped with rubber packing ring to be used in water and mud. Furnished with leather rings for use in oil, sulphur, etc.

Write for descriptive literature!

MacCLATCHIE MANUFACTURING CO.
COMPTON CALIFORNIA

PATENTS
JESSE R. STONE
and LESTER B. CLARK
Patents, Infringement Litigation, Trade Marks
Associated with
Andrews, Streetman, Logue & Mobley
2200 Gulf Bldg. Houston, Texas
Capitol 7245

PATENTS
Patents, Trade Marks, Copyrights and Infringement Litigation.
HARDWAY & CATHEY
428-29-30 Bankers Mortgage Bldg.
Phone Fairfax 8232 Houston, Texas

THE FORT WORTH LABORATORIES
Field Gas Testing. Analysis of oil field brines, gas minerals and oil.
Sell Thermometers, Hydrometers and Laboratory Glassware.
F. B. Porter, B. S., Ch. E., Pres.
R. H. Fash, B. S., Vice-President
828½ Monroe St., Ft. Worth, Tex.

HIRSCH, BROWN AND SUSMAN
ATTORNEYS AT LAW
32nd Floor Gulf Building
Houston, Texas
Specializing in Oil Law and Land Law

Squeaks *from the* BULL WHEEL

Fare—How much to make the journey to Versailles?

Taxi Driver—Three dollars.

Fare—That is far too much. Get in the cab and I will drive you there myself for half that.—London Passing Show.

"I told my wife I would shoot any man who had flirted with her at the seaside."

"What did she say?"

"She told me to bring a machine-gun."

"You sometimes find a pearl in an oyster stew," remarked the waiter, pleasantly.

But the customer only grunted. "I'm looking for oysters."

"Good morning, madame," said the serious-looking stranger who had called. "I represent the Society for the Suppression of Profanity. It is our object to take strong language right out of your life. We——"

"Come here, Dad," called the lady of the house. "Here's a man wants to buy our old car."

A new minister in a Georgia church was delivering his first sermon. The janitor was a critical listener from a back corner of the church. The minister's sermon was eloquent, and his prayers seemed to cover the whole category of human wants. After the services, one of the deacons asked the old janitor what he thought of the new minister. "Don't you think he offers up a good prayer, Joe?"

"Ah mos' suhtainly does, boss. Why dat man axed de Lawd fo' things that de odder preacher didn't even know He had."

Lecturer (speaking on the value of education)—"Yes, what can take the place of a university education? Nothing. Look at the man who only finishes grammar school. Where is he now? He is a motorman on a street car. But where is the man who has gone through university and has gotten his diploma?

Voice in Audience—"He's the conductor!"

"It was right smart of the Interstate Commerce Commission to decide that it has no jurisdiction over radio broadcasting," says Spike Rollinstock, the station agent. "You can't much blame them for not wanting to get mixed up with crooners, although it wouldn't be a bad idea to require blues singers and all such to obtain certificates of public convenience and necessity."

"Aren't the football games less expensive this year?"

"Yes, last year they cost me a dollar a gallon more for gin."

The policeman's son was learning music.

"How many beats are there to the bar in this piece of music, Dad?"

"Fancy asking a policeman a question like that," said the boy's mother. "If you asked your daddy how many bars there were to the beat, he might have been able to tell you."

An Arkansas clergyman who rides to his church in an automobile, received an anonymous letter calling his attention to the fact that the Lord never rode to church in a car. The clergyman read it from the pulpit, and added:

"If the writer of this letter will come next Sunday properly saddled and bridled, I will be glad to follow the Lord's example and come to church as He entered Jerusalem."

At the morning service, Dr. Holcomb will discuss "If the Depression Is Disappearing, What Lessons Are We Learning?" Mrs. W. L. Walker will sing "Search Me, O God."—Memphis Evening Appeal.

The new maid answered the telephone.

"Yes'm," she replied. Then "Yes'm" again, and "It sho is." The she hung up.

"What was wanted?" her mistress asked.

"Oh, dey was some lady asks effen dis was yo' house, an' I said 'Yes'm.' Den she asks effen you-all was at home, an' I says 'Yes'm' again. Den she say, 'Long Distance from Washington," an' I say 'It sho is'."—Capper's Weekly.

"So you're no longer a struggling stenographer?"

"No, as soon as I stopped struggling I didn't have to be a stenographer."

Index to Advertisers

Alexandria Hotel .....
American Association of Petroleum Geologists .....
American Brake Materials Corp. .....
American Cable Co. .....
American Sheet & Tin Plate Co. .....
American Steel Wire Co. .....
B. K. Appleman .....
Axelson Manufacturing Co. .....

Baker Oil Tools, Inc. 4
Baroid Sales Co. .....
The Barrett Co. .....
William M. Barrett, Inc. .....
Beebe Bros. .....
Bradford Motor Works 73
The Brewster Co. .....
Byron Jackson Co. .....Fourth Cover

Cameron Iron Works .....
Caterpillar Tractor Co. .....
Charleston Hotel .....
Continental Supply Co. .....

Darling Valve & Manufacturing Co. ....
E. M. Dart Manufacturing Co. 77
De La Vergne Engine Co. .....
Diamond Metal Co. .....
Dowell, Incorporated .....

Economy Electric Lantern Co. .....

Fairbanks Morse Co. .....
C. A. Fisher Co. .....
Fluid Packed Pump Company .....
Frick-Reid Supply Corporation .....
Fort Worth Laboratories 81

Gaso Pump & Burner Mfg. Co. .....
General Electric Co. .....
H. P. Gott Manufacturing Co. .....
Gray Tool Co. .....
The Guiberson Corp. .....
Gulf States Utilities Co. .....

Halliburton Oil Well Cementing Co.....
Hardway & Cathey 81
Harrisburg Pipe & Pipe Bending Co..... 78
Haynes Stellite Co. .....
Hazard Wire Rope Co. 6
C. M. Heeter Sons & Co. .....
Hirsch, Brown & Susman 81
Hughes Tool Company .....Front Cover
Humble Oil & Refining Co. .....
Houston Ready-Cut House Co. .....
Charles N. Hough Manufacturing Co....

Byron Jackson Co. .....Fourth Cover
Jarecki Manufacturing Co. .....
Jensen Brothers Manufacturing Co. ....
The S. M. Jones Co. .....
Jones & Laughlin Steel Corp..Third Cover

Kibele Manufacturing Co. .....

Larkin Packer Co. .....
Lexington Hotel .....

MacClatchie Manufacturing Co. 81
Martin-Decker Corp. .....
J. H. McEvoy & Co. .....
Maloney Tank Mfg. Co. .....
Lee C. Moore & Co. .....

The National Supply Co. .....
National Tube Co. .....
Norvell-Wilder Supply Co. .....

Oil Center Tool Co. .....
Oil Well Supply Co. .....

The Parkersburg Rig & Reel Co. .....
Pennsylvania Hotel 81
Petroleum Rectifying Co. .....Second Cover
Pittsburgh Steel Co. .....

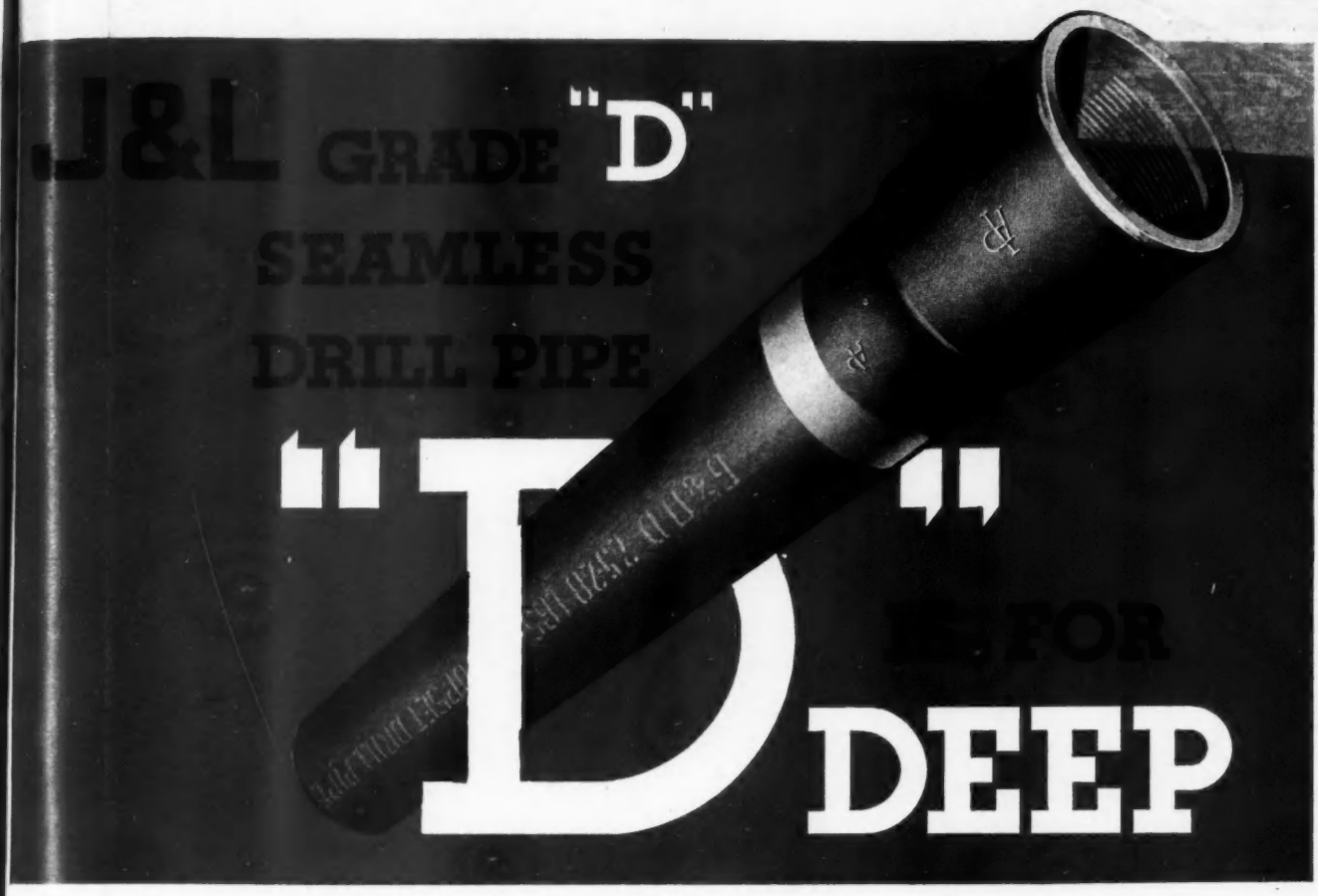
Reading Iron Co. .....
Reed Roller Bit Co. .....
The Republic Rubber Co. 25
Republic Steel Corp. 3
The Ruberoid Co. .....

Shell Union Oil Corp. 20
Snetcher & Pittman .....
South Chester Tube Co. 19
Sperry-Sun Well Surveying Co. .....
Standard Brake Lining Co..... 62
Jesse R. Stone and Lester B. Clark..... 81

Texas Electric Service Co. .....
Tretolite Co. .....
Trimont Manufacturing Co. .....

Wickwire-Spencer Steel Co. .....
Williamsport Wire Rope Co. .....
J. H. Williams & Co. .....
Wilson Supply Co. .....

Youngstown Sheet & Tube Co. .....



CASING DRILL PIPE · TUBING LINE PIPE · J&L PIPE · SEAMLESS · WELDED

THERE'S DEEP-WELL SERVICE IN EVERY LENGTH

Drilling depths and high speeds at which operators are now drilling demands Drill Pipe of exceptional strength and stamina. Interior Upset J & L Grade "D" A. P. I. Seamless Drill Pipe fully answers these requirements. The steel is strong and tough and is especially made in the J & L works for this product.

J & L Grade "D" Drill Pipe has minimum tensile strength of 95,000 pounds and yield point of 55,000 pounds per square inch. Full length normalizing after upsetting produces uniform grain structure with maximum physical qualities throughout the entire piece. Substantial upsetting permits satisfactory rethreading. Wall thickness is uniform. Threads are smooth and accurate. Critical inspections and tests are made at every stage of manufacture.

All steps in manufacture from our ore mines to shipping floor are controlled by J & L to insure quality and uniformity. Use J & L Grade "D" Interior Upset A. P. I. Seamless Drill Pipe. It will answer every requirement.

JONES & LAUGHLIN STEEL CORPORATION

J&L STEEL

Here's Safety and Convenience for Fast Working Crews!

BJ "150" Triplex Hook

...with three separate hooks, one for each elevator link and one for the swivel bail. "Locking-arms" make each hook a closed link, and also prevent the swivel bail or elevator links from "jumping" the hook if the casing sticks while running-in.

BJ Weldless Links...

die cut from a single piece of steel and known around the world as the links which are stronger than any derrick. The large eye at the top and the Perfection Bend at the bottom are features which add to the ease and speed of operation.

BJ Side-Door Slip Elevator...

safe for the longest, heaviest casing strings. The slips are automatically set by the collar, or can be set at any desired point by a setting lever—and do not stick. The side door feature permits removal while cement is setting.

Ask for detailed, illustrated literature.

BYRON JACKSON CO.

FORT WORTH · LOS ANGELES · NEW YORK